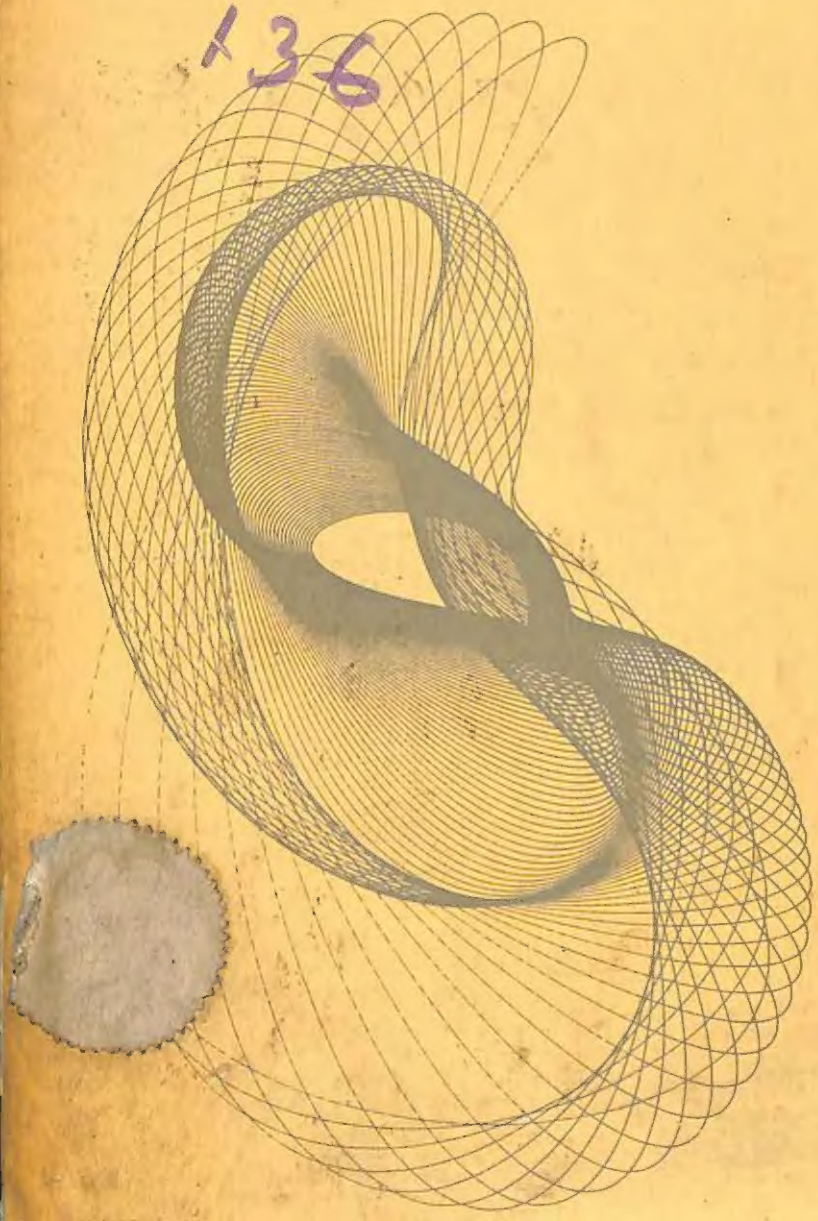
JAMES BREESE

Psychology and Everyday Life



PSYCHOLOGY AND EVERYDAY LIFE

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AUTHOR'S INTRODUCTION

The subject matter of this book has for the most part originated from discussion lessons with Sixth Formers and lectures to students in a College of Further Education. These are the topics which have 'come our way' during very open-ended lessons and lectures. This is why topics such as Academic Learning and Pleasure, are included, and why subjects such as Reward and Punishment are dealt with in an 'everyday' fashion rather than from a strictly 'psychological' approach. This book is not intended as a textbook 'Introduction to Psychology'. The student who intends to take a course at College or University which requires Psychology will find further reading recommended in the Bibliography.

During this century Psychology has become a science. It has, for the most part, cast off its connection with Philosophy. It is understandable why it has done this and yet (just as, for example, political factors *in practice* must often affect economic factors) so social, philosophical, and ethical factors still continue to affect the issues which interest psychologists.

There is also a current problem concerning the use of the word 'psychology'. The patient who complains of a pain in the leg for which the doctor can find no physical reason may conclude, 'It must all be psychological then'. He is using 'psychological' in a far broader, everyday, fashion than is tolerated by psychologists—who are concerned with the *scientific* study of behaviour. This book therefore is an attempt to bridge the gap between the expert and the lay use of the word 'psychology'.

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CHAPTER 1

PSYCHOLOGY—ANCIENT AND MODERN

Schools and colleges tend to classify subjects under one of two headings, Arts or Science. One of the most recent science subjects is psychology and a modern definition of it would be 'The scientific study of human and animal behaviour'. Yet psychology has its roots, with philosophy, in the Arts subjects and in some universities it can be studied in the Arts as well as the Science faculties.

The word 'psychology' comes from two Greek words. *Logy* means 'study' and *psycho* is usually translated as either 'mind' or as 'soul'. When the Greeks used the word 'soul' they meant by this something like 'life force', and not what we mean when we use the word 'soul' in a religious sense.

To-day psychologists prefer the definition—*the scientific study of human and animal behaviour*—rather than the literal meaning 'study of the soul'; but it is only in the last hundred years that Psychology has become a science. Its beginnings are in Ancient Greece, as are many other subjects, notably architecture, literature, philosophy, politics, history, education, and even science itself.

The Greeks were interested in causes. Their earliest scientists searched for a material cause of the world. One man saw this as 'water', another as 'fire', another as 'air', a fourth as a combination of the four elements, earth, air, fire and water. Then another group of thinkers thought of cause as atomic—*that which cannot be divided,* or, in other words, indivisible particles. Although the Greeks were seekers after truth, the object of their search eluded them—the theory of no one group of thinkers finally triumphed. These early scientists—philosophers as they are often called (from the Greek word meaning 'lover of wisdom')—turned from enquiry into physical things, such as air and fire, to questions more related to 'mind', such as the *nature* of knowledge, justice and happiness. It is at this point

that the history of Psychology begins. History is made by people and in the very brief historical survey which follows we consider the contribution to the history of Psychology made by some of the outstanding early thinkers in this field.

Plato lived from 427 B.C. to 347 B.C., mainly in Athens. He thought that the soul was divided into three parts, a desiring part, a courageous part, and a reasoning part. Animals possessed only the first two; man alone had the ability to exercise control over his feelings and emotions through the reasoning part. Man's chief objective in life was to enable the reasoning part, aided by the courageous part, to control the desirous part. The reasoning part of the soul was developed through the acquisition of knowledge. Plato also held that the soul existed separately from the body before birth and continued to live after it was freed from the body by death.

Plato's pupil, Aristotle, who lived from 384 B.C. to 322 B.C. was a biologist by training and could not accept Plato's distinction between body and soul. In Aristotle's opinion the soul existed as the life force in all living matter. In plants, the soul had only a nutritive element because, in order to live, plants have only to take nourishment into themselves. Animals move about and can *feel*, and so the souls of animals had in Aristotle's view two characteristics: a nutritive and a sensitive element. Man alone had the capacity to *reason*, to think and to make moral choices. Man's soul thus had three elements, nutritive, sensitive and reasoning. Like Plato, Aristotle emphasized the importance of the acquisition of knowledge in order that man should have the opportunity to make correct choices and so allow the reasoning part of his soul to control the other two parts.

Even after Europe became Christian, thinkers continued to be influenced by these two Greek Philosophers. Plato's view was the more widely accepted until the thirteenth century A.D. and thereafter Aristotle's view prevailed until the seventeenth century. In 1628, William Harvey showed how the blood circulates through the body and how the brain is more important than the heart as the organ responsible for movement. Aristotle, having little knowledge of physiology, had stated that the soul was centred in the heart.

Harvey's discovery caused René Descartes (who lived from 1596-1650) to turn back to Plato's theory of a separate body and

soul, although he showed that he recognized the importance of Harvey's work by locating the soul in the brain. As a Christian, Descartes could not abandon his belief that the soul was *unextended thinking substance* and yet he could not ignore Harvey's discovery. He gave the soul a place in the body, but still did not think of it as a 'thing'. The body he compared to a machine and held that among living creatures man alone could influence the way the machine worked. Animals and all lower creatures worked entirely by mechanical principles and could in no way be held responsible for what they were doing. Man alone could influence the working of body, because man alone had soul. For the next two centuries thinkers accepted the theory of Descartes, the so-called Dualism—division into body and into the mind. Psychology was to limit itself to study of the mind, and Natural Science to study of body. The two branches of knowledge were to be separate.

In the seventeenth century, Descartes had emphasized the difference between man and animals. In the nineteenth century Darwin sought to prove that man was descended from the apes and thus that the distinction between man and animal was by no means so clear. Darwin's Theory of Evolution caused psychologists to concern themselves once again with body as well as mind. Man is considered by modern psychologists to be a highly developed form of animal, not a totally separate type of creature. Aristotle's theory is more acceptable than that of either Descartes or Plato.

Psychology is today thought of as a branch of biology rather than of philosophy out of which it originally grew. The psychologist is ever waiting for the physiologist to discover more about the blood, the glands and the nerves. The psychologist no longer thinks of mind as separate from body, but of the whole organism (the complete living creature), whether it be animal or man that he is studying. The psychologist is interested in behaviour, in the broadest sense of the term, that is, with activity, not just with thought. Psychology, since it claims to be a science, has become experimental.

SCIENTIFIC METHOD

As with any other science, psychology has need of laboratories where

experiments can be carried out under controlled conditions. It is only possible to carry out experiments properly if one uses *Scientific Method.*

In the sixteenth century Francis Bacon was enquiring scientifically into the essential properties of heat.

First he listed all the cases where heat is found: fire, boiling water, friction and other circumstances. Then he worked out a table showing the amount of heat in each instance. He also listed all cases where no heat was found. He concluded that the essential property, always found wherever there is heat, is motion. This method of reasoning is called Inductive, and it necessitates as many instances as possible being drawn up, from which data a common feature is discovered. The method is laborious, requiring patience and constant application, but it results in conclusive proofs.

As opposed to the Inductive Method, we have the Hypothetico-Deductive Method, first formulated by Galileo in the sixteenth century. The deductive method is more adventurous, less certain to produce results, but essential if science is to remain active. Instead of many instances, just a few are noted, a tentative conclusion is reached, and then the conclusions from these few instances are tested by controlled experiments. If the conclusions are not borne out, then the original theory must be changed and tested again. The Natural Sciences have long followed Galileo's method and this is now the method that Psychology prefers, though for three centuries it followed Bacon's Inductive Method.

We can consider an example of the deductive method. Because the white rat breeds quickly and is easy to house and to handle it is a good subject for experiments. The ability of this rat to learn has been investigated in many ways; in particular its ability to discriminate between shapes. The first stage in any experimental exercise must of course be observation. The scientist observes that rats can find their way to food. One of the first questions that arises is—on what sense does this ability depend? Does sight play any part? If the investigator considers it probable, he will form a hypothesis that a rat will be able to distinguish between, say, a white square and a white diamond. He then designs an apparatus which causes the rat to be faced with the choice of approaching a white square or a white diamond. These two

shapes are on small doors behind one of which, the square shape, food is placed. This door becomes the *positive stimulus*. The rat has an incentive to learn to approach it and push it open in order to find the food. When the rat goes to the square (the positive stimulus) it is rewarded and when it goes to the diamond it is not. The positions of square and diamond are then interchanged randomly so as to eliminate the possibility of the rat learning by going always to the right or to the left.

In the experiment so far the investigator has formulated a hypothesis; that rats can discriminate between the shape of a square and a diamond. This hypothesis is tested by controlling all other factors that could lead to choice being made—such as the different or relative positions of the two stimuli. It is important for the scientist to be sure that what is being discriminated is square and diamond, and, for example, not the position right from left. With such methods it is possible to recognize that learning will take place only if a reward is offered (otherwise there is no motivation to cause the rats to go to the one stimulus rather than the other). In practical terms, the scientist takes care to ensure that the rats are hungry and that food is available at only one of the two stimuli. By placing a number of rats a number of times in positions where they are motivated to learn (for example, in the apparatus in which a choice must be made) it is possible to find out whether the rats can in fact learn to distinguish between the shape of a square and the shape of a diamond.

The scientist will take even further precautions and interchange the stimuli randomly and then record the number of trials during, for example, three-minute periods in which each rat makes the correct choice. If there is improved performance (if the number of errors or wrong choices decreases as practice is given) then clearly learning is taking place. If there is no improvement then the basic hypothesis is wrong, and discrimination of this type is impossible for the rat. The experimenter might then try again with different rats and different stimuli; for example he may use a circle and a line, or a circle and a cross.

If, however, it is found that the rats can discriminate between the square and the diamond the experimenter may decide to examine the

Situation more closely. 'What is it that the rat learns?' he may ask. 'Is it distinguishing between the whole of the figure or between only a part?' He designs a second set of experiments in which the rats have to try to discriminate between shapes which resemble the lower halves B_1 and B_2 and between the upper halves C_1 and C_2 of the original figures. He finds that their ability to discriminate between B_1 and B_2 is as good as their ability to discriminate between the original figures A_1 and A_2 but that they cannot discriminate.nearly so well between C_1 and C_2. This result suggests to him that in the original experiment the rats paid attention not to the whole Figures A_1 and A_2 but only to part of the figures, the lower halves B_1 and B_2.

The results of one experiment should always lead to another, whether the hypothesis be proven or not. The experimenter deduces by observation that under certain conditions a certain result may be obtained. He then puts this to the test experimentally under controlled laboratory conditions. He must be sure that he investigates only one variable at a time and will vary only one circumstance. In the experiment described above he will vary the relative position of the square and the diamond in order to make sure that when a correct choice is made this really is due to the animal's ability to discriminate shape and not to its ability to learn to go always to the right or to the left. He must also make sure his stimuli are the same size (other similar experiments have shown that if faced with a choice situation in which one stimulus is bigger than the other the rat always chooses the larger of the two).

Clearly the less complex the subjects, the easier it is to carry out a scientifically valid experiment. The complexity of dealing with a human subject is a special problem.

If a person has a headache and is given a pill, there is a distinct possibility that even if it is a completely neutral sugar coated substance—a placebo—he will often report feeling better. A real pill would be designed to produce chemical changes in the body and thus have an actual physiological as well as a psychological effect. On occasion a psychological change, as assisted by the placebo, does the trick. How then could we validly test a new pill, for example, to cure car sickness, so as to make sure that it was the chemical substance of

QUESTION

Can a rat discriminate between:

A1  and A2 

PROCEDURE

A is made the *positive stimulus*. Whenever the rat goes to A, the rat is rewarded.

The positions of the two stimuli are varied to ensure that the rat is discriminating between square and diamond and not simply between right and left.

FURTHER QUESTIONS PROMPTED BY THE EXPERIMENT

Does the rat need the whole figures in order to discriminate or would it discriminate equally well between:

B1  and B2 

Would it discriminate between:

C1  and C2 

which the pill was composed that brought about the change and not merely the fact of being given a pill?

First we would need two fairly large groups of subjects all of whom are prone to car sickness. The two groups should be equal as regards age and sex. The one factor in the situation which will be varied is that one group will be given the real pill and the other the placebo. All other variables, those factors which could bring on car sickness or inhibit it, must be the same so as to ensure equal conditions for both groups. Type of car, length of journey, speed of car, driver, position of passenger, length of time since last meal, type of food eaten at last meal, conversation or not during the journey, amount of air entering car, all these are factors which could affect the tendency to car sickness—apart of course from the number of starts and stops encountered during the journey which each passenger is to make!

Supposing we were able to carry out this suggested experiment with 100 subjects and found that of the 50 in Group A given the dummy pill, 25 were ill or experienced nausea during the test journey and of those in Group B given the real pill only 20 were unwell. At first sight it would seem that the effectiveness of the pill was proven. But here we must remember the part played in life by chance. Supposing one spins a coin 50 times, it is quite possible by chance alone to get 35 heads and 15 tails. Spin it another 50 times and the reverse might be the case. In other words there is no certainty in our pill experiment that if we carried out exactly the same procedure with 100 other subjects we might not find, simply due to chance, that in Group A only 20 were ill and in Group B, 25. The results of the experiment have therefore to be treated by a statistical analysis in order to establish how far the results we have obtained could be due to chance. We cannot here consider statistical techniques used by psychologists in different types of experiments, but whether the result of an experiment is significant or not can only be determined by using a statistical technique. This will prove whether the result is a chance result or not.

This may be an over-simplification of the use of scientific method; but the scientist—including the psychologist—must forever experiment. The objective of science is to experiment, to formulate laws and hence to predict.

PSYCHOWORDS often confused

	LITERAL MEANING
Psycho-LOGY	*study of the mind*
Psych-IATRY	*doctoring the mind*
Psycho-THERAPY	*curing the mind*
Psycho-ANALYSIS	*loosening up the mind*

CHAPTER 2

THE IMPORTANCE OF EARLY EXPERIENCE

Since it is from their mothers that mammals and, in normal circumstances, humans obtain their food, the close relationship between mothers and their infants would seem to exist primarily because the mother is the food-provider. However, when psychologists and others interested in infant behaviour investigate the mother/infant relationship, their findings do not support this idea.

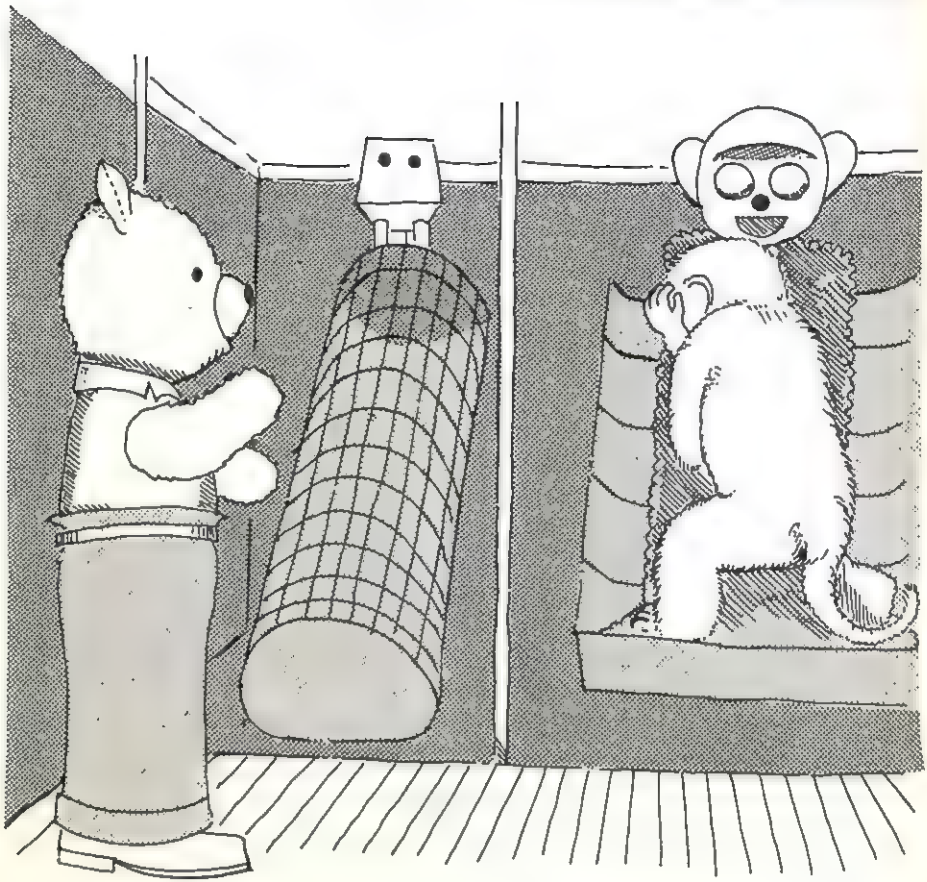
Konrad Lorenz, the Austrian naturalist, discovered that the characteristic of the mother graylag goose that causes her young to attach themselves to her is simply that she moves! Lorenz hatched in an incubator eggs laid by a graylag goose. The first living creature that the goslings saw on leaving the incubator was Lorenz. When Lorenz moved they followed him and he became the mother substitute. He then attempted to make 'his' goslings attach themselves to a mother goose. He placed them under a large box with the recently hatched goslings belonging to this goose. On lifting the box the goslings naturally hatched by the goose followed her and those Lorenz had incubated continued to follow him.

Lorenz later investigated mallard ducklings to establish whether they would adopt him as their 'mother'. Initially they did not, nor did they adopt a muscovy duck when given the opportunity. It was not until they were shown a white farmyard duck that they adopted it as a 'mother'. The reason that they followed was not the colour but because the white duck had the same call-note as the mallard duck. When Lorenz exposed another group of mallard ducklings to himself and imitated the call-note they followed him. He discovered that it was the sound of the mother rather than her appearance to which the mallard ducklings normally reacted. Another experimenter found that newly born animals did not necessarily require a living creature to which to attach themselves. He showed recently hatched

chicks a cardboard box and discovered that they followed it when it was made to move.

A series of experiments with infant monkeys, carried out by Harry Harlow at Wisconsin University, U.S.A., showed that softness of texture brought the monkeys security and comfort; a food provider that was hard in texture did nothing to relieve anxiety. Harlow constructed surrogate (dummy) 'mothers' in the form of a bare wire cylindrical shape, surmounted by a wooden head with a crude face. One of these models was left in this condition, the other was covered by a type of soft towelling cloth. It was called a 'cloth mother'. Each model, one of hard texture and one of soft texture was provided with a nipple from which the young monkey could obtain its milk. The monkeys were placed individually in their cages, some with one type of model, some with both, but without their natural mothers. Both models proved satisfactory as food providers; but if both models were present in the cage, even the infants which were receiving their food from the bare wire model showed a distinct preference for climbing on and cuddling the cloth mother. The little monkeys also went to the cloth mother for comfort when frightened by a new experience. For example, if an unusual object—a mechanical teddy-bear—was put into the cage, the infant monkeys were terrified and rushed to the surrogate mother. Another batch of monkeys had only the bare wire mother and when they were frightened they quickly abandoned it and continued to rush around the cage in panic. The presence of this mother did nothing to relieve their anxiety. On the other hand, those which had the cloth mothers clung to them for some time and eventually accepted the presence of the mechanical teddy-bear without continuing to show fear.

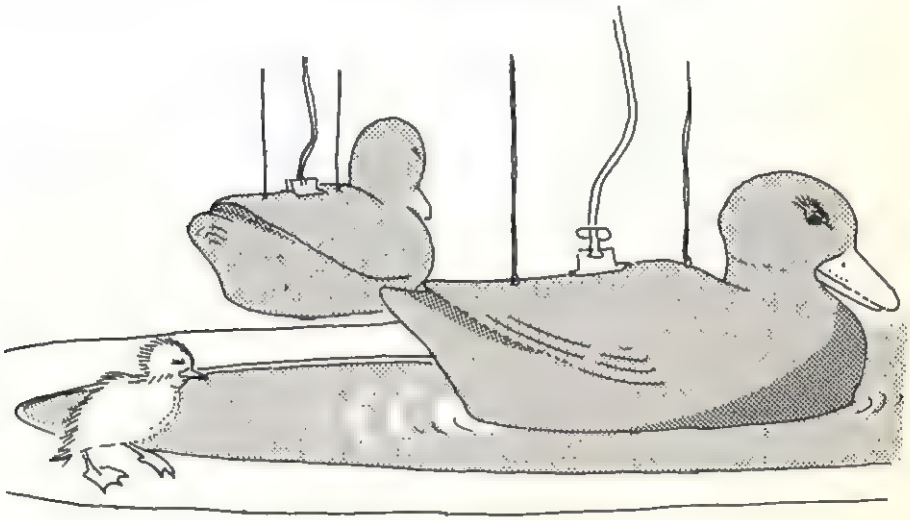
The experiments so far described also demonstrated that attachment to a model is more lasting if the infant is introduced to it during a particular period of its early life. In a laboratory experiment Eckhard Hess of Chicago University showed that mallard ducklings form the closest attachment to a model if they are first shown it between 13-17 hours after they are born. Young mallards whose ages varied between 1-32 hours were shown a model of a male mallard duck (of the type used by duck hunters as a decoy). The model was suspended from a motor-driven arm pivoted at the centre of a



Frightened by the teddy-bear, the infant monkey goes to the cloth mother.

runway. Each young mallard was in turn placed in the runway of the apparatus about a foot away from the decoy. The decoy was made to utter sounds like 'Gock, gock, gock' (a human voice was transmitted through a loudspeaker inside the model). The model was then moved round the runway and each duckling followed it for some time. Subsequently the ducklings were placed in the runway again. This time they had not only the original male decoy present, emitting its human 'Gock, gock' noise but also a female model, which was equipped with the sound of a *real* female mallard calling her young.

The ducklings thus had to choose whether to follow the original male model with its human voice or the female with its natural voice. Over three-quarters of those ducklings which had been shown the male model between 13-17 hours after birth followed the male model rather than the female. Of those ducklings first shown it when they were younger than 13 hours only about half followed the male model. As the time of the first exposure to the male model increased beyond 17 hours after birth the tendency to follow the male model decreased. Only 5% of those first shown the male model 30 hours after birth followed it in the subsequent test situation.



To follow the male or the female model?

From *'Imprinting' in Animals,* by E. H. Hess, Scientific American (1958).

The process whereby an infant, whether duckling, chick, or monkey, becomes attached to a model or a human being is known as imprinting. Hess's experiment showed that imprinting takes place most effectively during a particular period of life. Such periods are called 'critical periods'. In Hess's experiment with the mallard ducklings, the critical period for imprinting was between 13-17 hours after birth. For Harlow's monkeys the critical period was much later and it lasted much longer. The monkeys needed to be with their

cloth mothers between the second and eighth months of life if these mother substitutes were to afford them maximum security. A monkey reared in isolation for the first two months of life and then given an opportunity for comfort from the cloth mother was as emotionally secure as those which had had such a mother from birth. But animals reared in isolation for eight months and which at that stage were given a cloth model did not use it for comfort nearly as much as those introduced to it at an earlier age. Another discovery was that those animals that had the comfort of the cloth model for six months and were then parted from it for the next eighteen months showed they were still attached to it when they were reunited.

Human infants are, of course, not subjected to such experiments, but the effects of early experience are of no less importance to them. If the critical period for the correct emotional development of the monkey is from 2 to 8 months, the corresponding period for the human with his longer development and longer life span is between about six months and two years. The human infant seems to need both to feel secure and to develop not as an isolated being, but as a member of society. Growth and socialization require that an infant becomes used to change, but if the change is too sudden and is introduced without consideration for the habits already formed, satisfactory emotional development may be impaired.

Other experiments with animals indicate that there are critical periods for the development of natural responses to stimuli. If the responses are prevented from developing during those periods the animals may never learn them. Puppies brought up in isolation for the first six to nine months of life were not only far more excitable and frightened when allowed out than their litter mates which had been brought up as pets; they were also unable to respond normally to painful stimuli. They walked into lighted matches and into sharp points, apparently without feeling pain. Their period of isolation prevented normal responses developing.

Human beings are rightly not subjected to such experiments but the effects of early experience are no less important for them. Recently there appeared in the national press mention of the death of a 'wolf boy'. This was a human being who was discovered some

fifteen years ago in a railway station in North America. His age was estimated at about fourteen. When found he was walking on all fours and he behaved like an animal rather than as a human. He had even grown teeth like an animal's. He was so unlike a human that it could only be assumed he had been suckled by a wolf and had managed to survive by learning animal behaviour. Though looked after by humans for the rest of his life he never learnt to speak nor to be in any way educable. In the fourteen years of his animal environment he had learnt to behave as an animal and he could not modify his behaviour very much when put into a human environment. Of course he may have had very little potential intelligence when born. This we do not know.

It has been found that normal human infants develop responses later than is usual if their environments are restricted. For example, the normal age for an infant to learn to grasp a ring is six months, provided the ring has been placed in the cot for some weeks previously and he has had a chance to observe it and play with it. One particular pair of twins were shown no rings till they were eight months old, by which time an infant would be expected to grasp a ring naturally. These twins were shown rings for 30 seconds a day on succeeding days, but it was not until the thirteenth day in the one case and the twentieth day in the other that they first succeeded in grasping the rings.

Infants brought up in Institutions may experience restricted environments. In one Institution in Teheran there were 600 children of all ages living in cramped quarters. The infants were only propped up in their cribs for feeding and they were given no toys. They remained in their cribs until they could pull themselves to a sitting position. At the age of twenty months only 4% of them could stand and none could walk. In another Institution in Teheran where the adult helpers were both more numerous and more attentive to the infants' development, and in which more toys were given to them, by the age of 20 months 70% could stand and 15% could walk on their own.

In these instances, where the learning of *physical* activities such as grasping and standing was delayed through lack of opportunity, no lasting harm appeared to be done. Though the infants learnt the

activity concerned when they were older their eventual performance was as good as that of other younger children.

Emotional development seems to be more lastingly affected by early environmental influence. Anthropologists (people who study the behaviour of primitive tribes) have come across two tribes in New Guinea which differ markedly both in the way they bring up their children and in the way they behave as adults. The Arapesh tribe bring up their children permissively and are always gentle towards them. As adults they are friendly to one another and to strangers. The Mundugumor on the other hand are harsh to their children and are aggressive to one another and to strangers. In the island of Bali the infants are mainly looked after by small girls and have little contact with their own mothers. The lack of close relationships in childhood may possibly be the reason why the Balinese people are unemotional.

Sigmund Freud, the Viennese psychiatrist, (1856-1939) worked out a theory of personality development in which he stressed that the way children are brought up and the relationships they form with their parents determine their subsequent emotional outlook and behaviour. The new-born infant receives nourishment by sucking. Freud thought that an infant who was weaned early from the breast might suffer frustration and as a result become a greedy and dependent adult. The first training a child receives is toilet training. Harsh and unsympathetic toilet training could lead to compulsiveness and lack of generosity in later life. In the third year or so of life the infant becomes interested in his or her sexual organs, according to Freud, and develops romantic feelings towards the parent of the opposite sex. This produces a fear of punishment from the parent of the same sex which in turn results in the infant imitating the parent of the same sex in order to avoid the punishment. Unless the child resolves this complex of feelings satisfactorily he may end up as an adult with a weak conscience and an inability to form good relationships with other people. Freud's theory as a whole cannot be tested which means that while it often seems to make sense it should be viewed with some degree of scepticism. Where a part of his theory has been tested results have not always borne it out.

In another set of experiments with infant monkeys Harlow found

that, even if the babies had no contact with their mothers, they adjusted socially, provided they had some daily period of play with other baby monkeys. They were given a 'playroom', equipped with climbing apparatus, into which they were placed for twenty minutes each day. This daily period for socialization was sufficient to enable them to develop normally; on the other hand, baby monkeys which were kept in isolation alone with their mothers and did not have the opportunity for play with monkeys of their age did not develop satisfactorily emotionally.

We should not draw direct comparisons between monkeys and men, but all teachers of young children testify to the value of play as a means of learning to be a member of a social group. It may not be necessary that all children should go to play-groups or nursery schools, but it is highly desirable that all children be given the chance to play with others of their own age. We must all learn at an early age to accept one another, to give as well as to take, and this can best be learnt in a group setting. Children of eighteen months, who, when put together, do not actually play with one another clearly demonstrate in other ways that they like being in one another's company. In time they learn to play, and not only do they share their toys, but each child learns respect for the rights of ownership.

Children need one another's company and friendship, but of even greater importance is their need of someone on whom they can depend, to whom they can go when they feel unhappy or insecure. Normally this is their mother. In the middle-class Victorian household this was often the nanny rather than the mother. In certain primitive tribes, where the women work in the fields and men stay at home, it is the father or uncle or grandparents upon whom the child depends. When children are adopted or fostered, it does not have to be the natural mother in whom the child's security is first vested. The disadvantage of a system in which mothers find baby-minders for their infants while they go out to work is that the infants may become confused as to whom they really do belong. The same problem arises in an Institution where there are a number of adults caring for the infants and the latter do not feel they belong to any one person in particular.

Today these facts are accepted and much is being done to

overcome the deprivations that result from a child feeling unwanted or rejected. Adoption societies arrange wherever possible for infants to be adopted before they are six months old. Children's departments of County Councils arrange for Children in Care to live in family groups with houseparents, rather than in large institutions. In hospitals, parents are encouraged to visit their children frequently, and some hospitals allow mothers to stay with their children and share in looking after them.

The years from birth to five are vitally important for the human infant; this is particularly true of the period between six months and two and a half years when a child is becoming increasingly aware of what is happening but cannot yet express his feelings in speech. The evidence that this period is critical comes not only from people who later in life develop neurotic illness but from children who become delinquent. Many criminals are found to have had a less settled and secure childhood than others of similar temperament and intelligence who have remained co-operative members of society.

CHAPTER 3

PHYSIQUE, TEMPERAMENT AND PERSONALITY

> 'Let me have men about me that are fat;
> Yon Cassius has a lean and hungry look;
> He thinks too much; such men are dangerous.'

Shakespeare puts these words into the mouth of Julius Caesar who confides to Mark Anthony his opinion of Cassius, the man who is shortly to murder him. Shakespeare's portrait of Cassius was based on the observation that personality is linked with physique. The thin cadaverous Cassius allowed no one to know his true feelings; he kept his thoughts to himself. He was introverted. Contrasted with him was the fat, fleshy man, typically portrayed by Shakespeare's Falstaff. Such a man shows his feelings, whether they be joyful or angry ones. He would be an extravert.

As early as the fifth century B.C., the Greek doctor Hippocrates divided people into two broad categories, the 'leptosomatic', long thin type and the 'pyknic', short and stocky. Hippocrates based this division on his observation of the different types of physical disease that afflicted people with these markedly different physiques. In this century, a German psychiatrist, Ernst Kretschmer found that there was a tendency for one particular form of mental illness to afflict short, fat people, and for another type of mental illness to afflict tall, thin people.

While observation indicates that personality characteristics are strongly linked to physique, the psychologist does not accept the validity of observations until they have been scientifically tested. Following Kretschmer's observations, an American psychologist, W. H. Sheldon tested a theory that people's temperament, and thus their personality too, depended on their morphic (shape) component. The terms he used, endomorphic, mesomorphic, and ectomorphic, derived from the names of the cell layers in the embryo

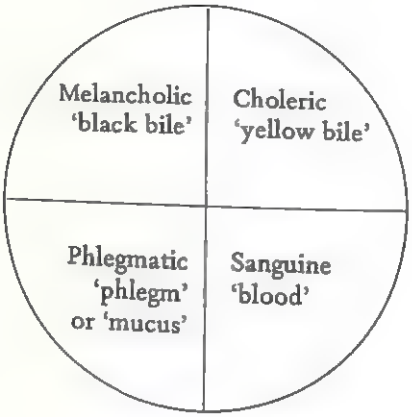
from which different bodily tissues originate. The endomorph is characterized by his viscera, his paunch; the mesomorph by his bone and muscle, and the ectomorph by his high proportion of skin (outside) to size. Sheldon then rated his subjects on a 7-point scale for each of their morphic components. Supposing a man were rated as 2 for endomorphic component, 6 for mesomorphic, and 3 for ectomorphic, he would be predominantly mesomorphic. To each of these physical components Sheldon assigned a temperamental one. He also rated his subjects on their temperamental components and established to his own satisfaction that there is a positive correlation between physique and temperament; in other words, according to Sheldon it is statistically true that the endomorphic person is one who is fond of food, sociable, and keen on bodily comforts. However, other experimenters, using tests of personality, rather than ratings, found that Sheldon's conclusions were not always valid, and that there are few significant correlations between body build and temperament. Thus, whatever we may be tempted to conclude from our observation of a person's physique, we cannot predict with certainty that he will tend to have particular characteristics.

Personality characteristics may depend on temperament but temperament depends on body chemistry. Again it is to Hippocrates that we turn for the first observations in this field. Hippocrates maintained that the individual emotional differences in men were due to the varying quantities of blood, yellow bile, phlegm, and black bile found in their bodies. In the second century A.D. Claudius Galen, another Greek physician, used Hippocrates' descriptions in classifying people according to four temperaments. These were sanguine (blood) choleric (yellow bile), phlegmatic (phlegm) and melancholic (black bile). A characteristic typical of each of these temperaments would be, for sanguine, cheerfulness; for choleric, anger; for phlegmatic, lack of emotion; for melancholic, moodiness. Galen concluded that the categories were exclusive, that each person must fit into one of them and that there could be no overlapping. However, if we consider Falstaff, for example, there seems to be some overlapping. At one moment he shows a sanguine disposition and exudes cheerfulness, and the next, when he rants and rages, he is distinctly choleric. Cassius' unexpressive thoughtfulness would place

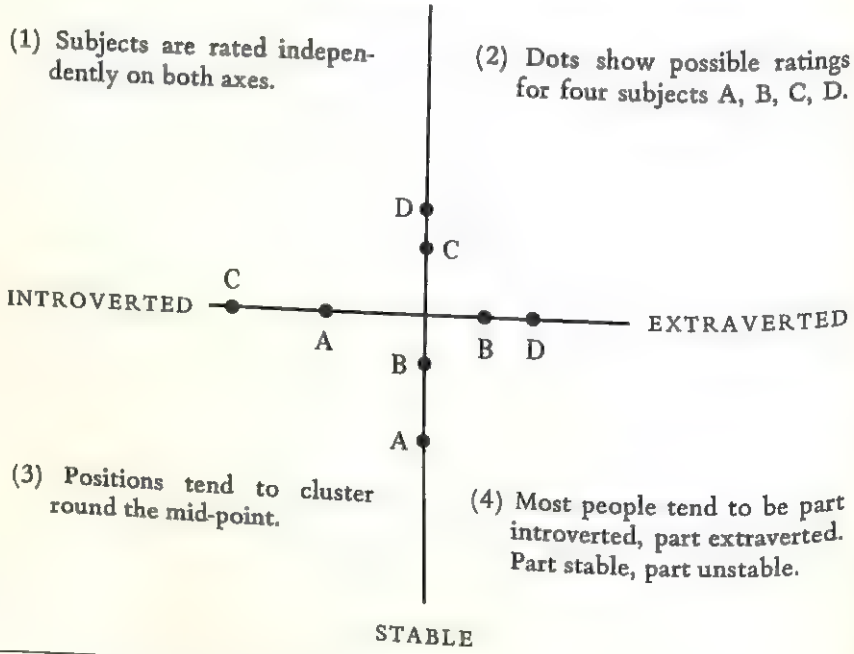
him in both the melancholic and phlegmatic categories. Galen's belief that his categories were exclusive was accepted by psychologists until the nineteenth century when Wilhelm Wundt, the founder of experimental psychology, challenged his theories. Following Wundt, H. J. Eysenck suggests that it is more realistic to assign people positions on two distinct axes, rather than place them in one of four distinct categories. One of these axes is an extravert/introvert continuum, and to the other he assigns the name stable/unstable. Galen's four temperaments can still fit into the design. Two of them, sanguine and choleric, clearly fit the extravert, the person who is ever looking outward and expressing himself according to how he feels at that particular time. Equally well, phlegmatic and melancholic fit the other side of the continuum, characterizing the introvert, the person who looks within himself and who suppresses his feelings. The characteristics sanguine and phlegmatic, on the one hand, and choleric and melancholic on the other, fit the other axis. The first pair—sanguine and phlegmatic—indicate stability and the choleric and melancholic pair indicate instability. Every individual can thus be assigned a position on each of the axes. Most people have their positions around the point of origin, the middle.

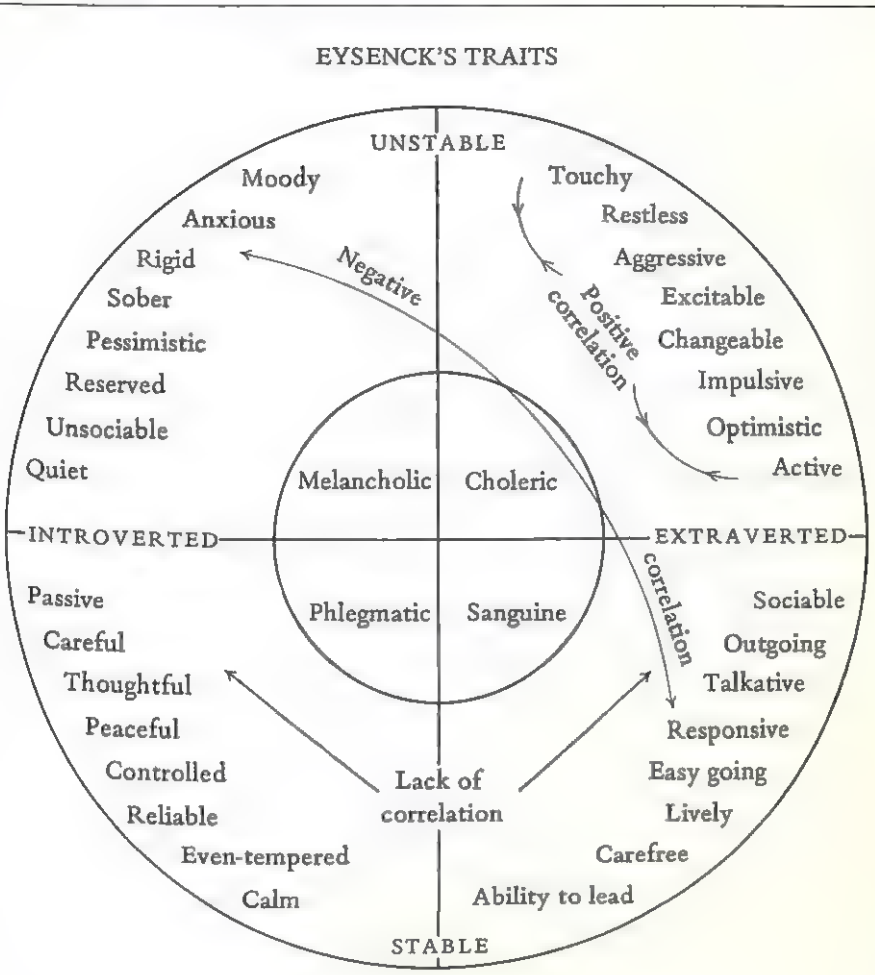
Eysenck uses the broad classification introvert/extravert, stable/unstable in order to *summarise* characteristics. Such a classification does not tell us enough about their *individual* characteristics. Eysenck and other contemporary psychologists prefer to think of personality as something shown by individual traits. Considerable research both in Britain and America has shown that there is a tendency for traits to cluster together in any one individual. If a person is rated high on a quality such as reliability, it is likely he will also be rated high on calmness, carefulness and thoughtfulness. If he is rated high on aggression, he will tend to be rated high on restlessness, excitability and impulsiveness. The evidence from rating a great many subjects on the thirty-two traits illustrated on p. 23, and subjecting the results to statistical analysis indicates that the traits can be placed into four groups. Traits in the same group correlate positively, that is to say there is a marked tendency for a person rated high in one of them to be rated high in another. The closer the traits, the higher the correlation. Traits correlate negatively

GALEN'S FOUR TEMPERAMENTS



Eysenck's Personality Scales





Characteristics in the same quadrant are found to correlate positively. A person rated high on one will tend to be rated high on any other. Characteristics correlate negatively with those in the opposite quadrant. A person rated high on impulsiveness will tend to be rated low on reliability. There is no correlation between characteristics in neighbouring quadrants.

with those in the opposite quadrant and show a lack of correlation with those in neighbouring quadrants. If an individual is marked high in optimism, he will tend to be marked low on thoughtfulness which is in the opposite quadrant, and is as likely to be rated high as to be rated low on a characteristic such as liveliness which is in the neighbouring quadrant.

It must be emphasized that the existence for such correlations between traits is due to the net results of the ratings on a great many subjects. If we rate the personality of an average individual we find a tendency for our ratings to cluster around the mid-point. This form of rating therefore is best used to prove or confirm the more *extreme* personality traits.

Clearly the result of the experimental work carried out on traits bears close resemblance to Galen's classification according to temperaments.

There is also evidence that our personality is partly inherited. When psychologists investigate intelligence they make use of studies of identical twins in order to discover the part played by inheritance. Much the same study is made to assist psychologists to understand personality.

If traits were acquired mainly through environment, we would expect that the trait ratings of identical twins brought up in different environments to be less similar than those of identical twins brought up in the same environment. In fact greater similarity has been found in the ratings of twins brought up in different environments than in those of twins brought up in the same environment. Such a result can be understood if we remember that twins who are living together will be trying to establish their own identities and will therefore have more incentive to try to be different from each other than twins brought up in different homes. It has also been found that identical twins have more similar trait ratings than have fraternal twins (twins developed from separate egg cells). We have clear statistical evidence from all such studies that the closer the physical inheritance, the greater the resemblance between the personality trait ratings. The evidence from studies of identical twins brought up separately when compared with those of twins brought up together shows that inheritance is more important than environment in determining the formation of the traits we have so far been considering.

So far we have seen that inheritance is responsible for a number of personality characteristics. We shall now examine the evidence for the environment being responsible at least in part for other characteristics, notably honesty.

The evidence for the importance of the environment comes from retrospective studies—studies in which the psychologist looks back over the life history of, for example, two groups of children in order to see whether there have been specific differences in their upbringing which are responsible for their later development. Conclusions can only be based on retrospective studies because it is clearly unethical to place one group of children deliberately into a bad environment in order to examine how their development compares with a group of similar inheritance who have been placed in a good environment.

Dr. John Bowlby, a Child Psychiatrist, compared the case histories of two groups of emotionally disturbed children brought to a Child Guidance Clinic. One group consisted of 44 children who were known to have stolen things. In the other group none were known to have committed this offence. The first group were found to differ from the second in two ways. Of the 44 who had stolen, 14 were found to show no signs of being able to be affectionate, whereas in the second group all could show affection. The second finding was that 17 of the 44 who had stolen, which group included 12 of those unable to show affection, had been separated from their mothers for at least six months during their first five years of life. Only two of the children in the other group had been separated from their mothers.

Dr. Bowlby's study points clearly to maternal deprivation as one—though not the only—reason for children stealing. Another child psychiatrist, Dr. D. W. Winnicott, states that the child who steals feels unconsciously that he has been deprived of affection; that in stealing he is trying to regain love.

Further evidence comes from a study by Dr. W. Goldfarb, a New York psychologist, who compared the mental development of two groups of children in foster homes. One group had been brought up in an Institution from the time they were handed over by their mothers (between birth and nine months) until the age of three years when they were transferred to foster parents. The other group, of

similar heredity to the first, had gone immediately into foster homes (not an Institution) when their natural mothers handed them over to Care.

The children who were in the Institution from birth had been kept in their own separate cubicles for the first nine months of life; during this time their only contact with adults was when they were dressed and fed. In their second and third years they were supervised by nurses, each of whom had as many as 15-20 children to look after. Then these children were placed in foster homes. Despite the fact that they had been in their foster homes for at least six years at the time that Dr. Goldfarb tested them, these children were found to be below the standard of those who had gone to foster homes within the first six months of life. Not only were their intelligence test results lower, but they were found to have greater difficulty in making friends and in keeping rules. Whether we attribute these differences to their lack of individual care while in the Institution or simply to the change of environment when they went to foster homes at the age of three, we can be sure that the differences were due to environment rather than inheritance.

Individual case histories of children and adults who are being medically treated by psychiatrists or being helped to readjust to their environments by social workers support the theory that environment affects the development of personality characteristics. Such workers are not able to compare one group of children with another as Dr. Bowlby or Dr. Goldfarb did, nor do they examine case histories of children who do not require treatment, for the purposes of comparison with those who do require it. Nevertheless, their findings suggest strongly that there is a correlation between the tendency to become a criminal or to become emotionally disturbed, and a bad early environment or difficulties in early childhood. Typical examples are the following.

A girl of seven became emotionally disturbed soon after the birth of another child to her mother and step-father. The step-father had treated her well up to this point, but after the birth of his own baby lost interest in her. The mother herself became upset, and the general atmosphere in the home became so intolerable for the girl that it was decided to send her to a boarding school. The girl's emotional disturbance was the result of environmental changes.

A girl of eight was brought to a Guidance Clinic by her adoptive parents because she was telling lies and stealing. She was also unable to make friends with other children and at home her parents found it was very difficult to understand her attitudes. She appeared affectionate on the surface but, in her mother's words, she 'would kiss you, but it would mean nothing'. Her case history revealed that she was an illegitimate child and in the early years had been shifted from one relative to another until she was six. At that age she went to a foster home before going to her adoptive parents at six and a half. Although the adoptive parents were good to her, the child's early experience of constant change prevented her from behaving as a child from a secure background would have done.

A young man of nineteen was caught with two other men stealing a crate of whiskey. Because he had experienced a difficult home background the magistrate made allowances for that and he was put on probation rather than being sent to Borstal. His father had deserted his mother when he was three and she had married again. He was intensely jealous of his younger step-brother; by the age of ten he had started to steal. His step-father was mean to him and continued to treat him as a child long after he left school. The psychiatrist who reported on him when he was on remand noted that his bad relationship with his step father showed itself in his relationships with other adults who were in charge of him. At school he had failed to do justice to his intelligence and he had got on no better with his foremen in his jobs after he left school than he had with his teachers. His parents had provided him with material comforts, but had not enabled him to grow into a responsible adult. A condition of his probation was that he should live in an approved hostel rather than remain at home.

A young man of eighteen was convicted of stealing an expensive sports car. In his case there was no history of deprivation, but there were circumstances in his early life that could account for his particular choice of car. During the war he and his parents had been evacuated to a large country house where his mother became housekeeper to the wealthy, childless couple who owned it. This couple liked him and invited him to stay with them on many occasions after the war ended and his family returned to London. Then one day the couple were killed in a car accident and his contact

with the big house ended. He had to be content with much less exciting holidays. Yet he continued to be influenced by his experiences there. He bought expensive clothes, began to speak with a refined accent, and tried to obtain a post as a footman. His 'borrowing' of the expensive sports car was in keeping with this wish to identify with wealthy people.

These examples are typical of what is frequently found when investigating the early lives of those whose problems bring them to the notice of social workers or the police. Inconsistency of treatment by parents, constant or sudden change, separation from parents, overdiscipline, lack of discipline, neglect—to these early environmental influences can often be attributed later criminal behaviour or psychological illness. Conversely, when the environment is good, the child's personality becomes so organized that, in the words of Dr. J. A. Hadfield, 'It is virtually impossible for an individual to have a nervous breakdown for such a personality is capable of facing up to any emergency in life. There were many men who spent years in meeting the hazards of war and came out stronger men than they went in. On the other hand, if you analyse a man with "shell-shock" or other traumatic (harmful) neuroses, you will find that there were factors in early childhood rendering him incapable of coping with his present situation.'

CHAPTER 4

THE BRAIN AND INTELLIGENCE

To understand what is meant by intelligence we must first study the brain.

Man differs from all other animals in his ability to learn to solve complex problems. Other animals can learn. Man does more than learn. He invents. He is able to invent because he has a more highly developed brain than even those animals from which he is directly descended.

In man the neo-cortex (new brain) is relatively much larger than it is in the ape. The ape has a relatively larger cerebellum (old brain) than man. At birth the cerebellum is already developed and it is this that enables the ape to learn to move about and feed itself far more quickly than the human infant whose cortex is still developing at birth and indeed is not finally developed until adolescence. It is because his cortex is much larger than the ape's that man can reason so much more effectively than can the ape.

The brain is composed of some 10 billion nerve cells, but at birth many of these are not fully formed. Until they are, the right messages cannot be sent along the afferent nerves (those nerves which carry 'messages' to the brain from other parts of the body), nor along the efferent nerves (those which carry 'messages' from the brain to the muscles). Until the nerve cells are fully developed, an infant will not be mature enough to smile or wave an arm, or act in a co-ordinated way.

It might be thought that a person who is brilliant at learning has a bigger brain than one who is less brilliant. In fact this is not so, although people of very low intelligence are sometimes found to have brains in which the nerve cells are smaller and less closely knit than those of normal people. What makes a person 'brainy' is not so much the size of his brain, but his ability to store pieces of information economically and efficiently. The nerve cells themselves have

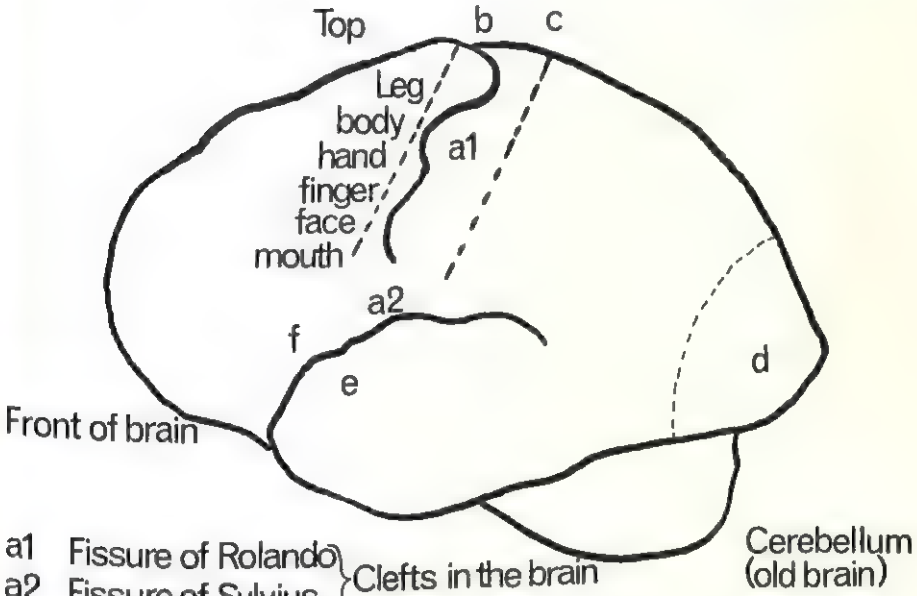
between them millions of 'end bulbs' which connect together. Efficient storage of information can be thought of as making the right connections. The brain has been viewed as being similar to a highly complex telephone exchange.

The importance of the brain is demonstrated by what happens when it is damaged, for example, by severe injury to the head. The result could be not only damage to the head, but loss of movement or sensation in another part of the body. The diagram shows how particular areas of the brain are responsible for certain functions of different parts of the body. If the part of the brain that is responsible for vision is wholly damaged then blindness will result, even though there is nothing wrong with the eyes as such. Brain cells when damaged never recover. When damage in an area of the brain is only partial other parts of the brain can take over the functions for which the damaged parts were particularly responsible. The ability for other parts to take over becomes less as we grow older. It is easier for a young person to recover from a brain injury than an older one, if the brain cells of each are damaged to the same extent.

Injury to the brain may occur in ways other than damage inflicted on the head. In the pre-natal (before birth) stage injury may result from an accident to the mother or from the administration of a drug which has previously unknown side-effects. During the birth stage itself brain injury can occur if the oxygen supply to the new born infant is insufficient. This oxygen deprivation can lead to permanent damage of the brain cells and so affect subsequent life that the victim is always dependent on adult help even for the simplest functions. Spastics are often the victims of oxygen deprivation but the degree of brain injury varies so that in some spastics only the limbs are affected and the intellect is entirely unimpaired. Injury can also occur in the post-natal stage (at any time of life though usually among old people), as a result of a tumour growing in the brain or as a result of a stroke. The loss of bodily function will depend on which part of the brain has been affected by the tumour or stroke. If it is in that part of the brain responsible for sensation, then there will be a loss of feeling in a limb or limbs; if it is in the area responsible for movement, it will show itself in the inability of the patient to move a leg or an arm; if it affects the speech area, in time the patient will

lose the ability to talk, though he will still be able to understand what is said to him. As has already been said, it is sometimes possible for other parts of the brain to take over the 'job' of an affected part, and this is why people are able to recover the loss of sensation or movement caused by brain injury.

Brain damage is also seen in the illness known as dementia; this is due either to the hardening of the arteries which supply blood to the



a1 Fissure of Rolando
a2 Fissure of Sylvius
} Clefts in the brain

b area concerned with movement
c area concerned with sensation
d area concerned with vision
e area concerned with hearing
f area concerned with speech

brain or may be brought about by deterioration, through age, of the nerve cells. Dementia shows itself in the early stages by the inability of the patient to learn new material, and by a forgetting of recent events to a much greater degree than events of past years. Finally there is complete confusion about day to day happenings with

virtually total loss of memory for recent events. When we hear of old people losing their faculties, it is usually because they suffer from this illness.

Once we understand that the brain can 'age' it is easier to understand why it is that, generally, young people find it easier to pass, say, the driving test than do those well past middle age. The brains of young people are more 'plastic'—to use a word more familiar in other connections but one used by brain specialists who have researched into children's abilities to learn new material. Because of the brain's great 'plasticity' or 'suppleness', when one is young, there is good reason to suppose that the best time to learn to speak a foreign language is as soon as one has learnt enough of one's own language for speech to be fluent, that is, about the age of four. Pupils who have learnt to speak a foreign language through the language laboratory make much better progress (provided they are willing learners) than do their parents who take similar courses. Older people may make better progress because they are more keen to learn and because their powers of reasoning are better developed, but the *ability* to store information is most marked when one is young. Children who emigrate with their parents have much less difficulty in learning the language of a new country than do their mothers and fathers. Information is absorbed when one is young. When one is older, a more positive effort is needed.

But enthusiasm to learn is important. The ability to understand, if not the ability to learn mechanically, does improve with age and experience, though not of course indefinitely. The brain we are given at birth is a physical organ and therefore inherited, as with other parts of the body. Given a normal brain, the use to which it can be put depends on many factors, among which is intelligence.

INTELLIGENCE

Unlike the brain, or other organs, intelligence cannot be 'found' in the body although it can be measured. The word intelligence comes from the Latin word meaning 'to understand' and intelligence can thus be defined as 'the ability to understand' or as 'the ability to

reason'. Whether a person is intelligent or not is shown by his ability to solve the problems that are given him.

We have already seen that because he has a superior brain to that of animals, man has the ability to solve complex problems. If the brain is badly damaged he loses this ability. Clearly then, even if intelligence cannot be located, it must in some way derive from and depend on the brain.

The brain is physical, a part of the body. Our bodily characteristics are inherited from our parents and grandparents—genetical inheritance. Since the brain is physical and we inherit our physique, it is not surprising to find evidence that intelligence is largely inherited.

The most important evidence for this view comes from the study of identical twins. Identical twins come from the same egg cell or ovum in the womb—hence the description 'monovular' (single egg cell) or 'monozygotic' (single yoke) given to them; non-identical (fraternal) twins are called 'binovular' or 'dizygotic' since they come from two separate ova. Identical twins are as physically similar as any two human beings can be.

Twins have very similar environments because not only are they usually brought up in the same home but they also have the same experiences; they usually share a pram are given the same sort of toys, attend the same school, and play together. When the intelligence of identical twins is tested, the average difference between their Intelligence Quotients is only around six points whereas the average difference between the I.Q.s of fraternal twins (who *differ* in heredity) is about ten points, similar to the difference in the I.Q.'s of ordinary siblings (brothers and sisters).

Further evidence which suggests that potential intelligence is inherited comes from the 19 known cases in which identical twins have been adopted into different homes. Despite their different environments the average difference between their I.Q.'s is only eight points, less in fact than that between fraternal twins brought up in the same home. To take a reverse situation, where children from different natural parents are brought up by the same adoptive parents the average difference between their I.Q.'s would be about thirteen points.

It is usual for adopted twins to be placed in similar types of home, if not the same home. In the case of one pair of twins who were brought up in different homes but who received similar schooling the difference between their I.Q.'s when they were tested at the age of 23 was only two points. In another case, where the educational opportunities differed widely the difference in I.Q. was as much as twenty-four points. Thus it appears that while inheritance plays a very large part in determining potential intelligence, environmental influences are at least partly responsible for the development of the potential. How much difference does the environment make?

Supposing one identical twin was sent away to be brought up in a good home where there was always an ample supply of the necessities of life. He receives exactly the right amount of attention from those who are looking after him. He is well fed and clothed and given the toys that are appropriate for his age and stage of development. He is not pampered or spoilt, but he is given the best of environmental conditions.

His twin on the other hand goes to a very bad home. The parents are uninterested. They are bringing up the child on sufferance. They do no more than keep him alive. They make no effort to talk or read to him. He is given no love, few toys, and the minimum of food and clothing. Sometimes, for the sake of outward appearances, the parents display what seems to be affection. The next moment they are scolding him and beating him. Whenever they can, they leave him in the care of other people. He is brought up in the worst possible environment.

Before they are sent to school, both twins are given an intelligence test by a psychologist. They will of course be tested individually by being given simple puzzle problems to do and they will be asked simple questions. Under these two very different environments are their test results likely to be at all similar? The answer is 'no'.

Supposing they are then sent to the best possible school in the country? Will the earlier disadvantages still influence the performances of the twin brought up by the bad parents, even if he is moved to a better home? The evidence from case studies of children who have been brought up in Institutions and sent to good foster homes at the age of three indicates that the effects of an inferior early

environment will never be entirely eradicated. Physically the children may be no different finally from those whose environments have always been good. Emotionally and intellectually they will be unlikely to catch up and do as well as those with similar natural endowments who have enjoyed a good environment throughout their lives.

To return to our example, in the case of the twin from the bad home, we know that to put him into a good home at the age of four or even later will make some difference. He will have a better chance in life than if this were postponed till he was older, but the effects of the first four years will always be there.

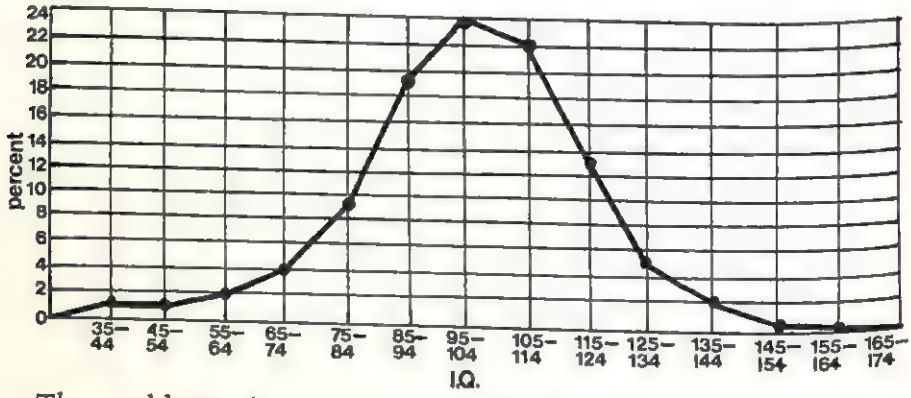
Of course our case is hypothetical—no experiment of that type should ever be carried out by humans on humans in a civilized society.

What is inherited is a *potential* intelligence, not an actual intelligence that will always be measurably there whatever the environmental conditions. To enable the potential to be fulfilled the environment must be a satisfactory one. Since it is parents who normally provide the environment, the importance of their role in the development of children is the prime factor.

We have referred to intelligence as 'the ability to solve problems' or as 'reasoning ability'. This is a definite factor that can be measured. The measuring apparatus is the intelligence test.

Originally intelligence tests were formulated by Alfred Binet in France (1857-1911) to select those children who were least likely to benefit from normal schooling. The tests were designed to pick out the *least* bright children, not the brightest. Binet devised his tests by initially testing hundreds of children of every age to try to find out the type of problem which children of different ages could normally deal with. Having then discovered what problems most 'normal' children could in fact answer, (without having had specific instruction at school) Binet then went on to devise tests which could be answered by children who had normal backgrounds and normal schooling. A child brought up in a silent home with no access to the normal environmental stimuli (encouragement) would probably not have learned enough general knowledge to be able to answer the questions. Such a child would inevitably perform poorly in such a test.

If a child of about eight years obtained the sort of score on the intelligence test that the majority of eight-year-olds attained then that child's mental age would be eight years. If he could answer only the questions normally answerable by average seven-year-olds then his mental age would be seven. Conversely, if he could answer questions normally within the grasp of ten-year-olds then his mental age would be ten. For many years the method used for calculating the Intelligence Quotient (I.Q.) was to divide the Mental Age by the Chronological Age and multiply the result by 100. Nowadays, as for example in the 1960 Revision of the Stanford-Binet Test, a child's score is calculated direct from Tables which take account of the scores of children of the particular age-group in question. This score is still called an I.Q. but is really a standard score. As is shown by the Diagram below, I.Q. scores are calculated in such a way that a score of 100 is reckoned to be average. The diagram shows the distribution of I.Q.s in 2904 children. 'Percent' refers to the number of children.



The problems that are set in intelligence tests are taken from everyday experience. People may not be familiar with the actual patterns that are used in a test of perceptual ability (which is concerned with the ability to discriminate, and thus tell differences between things) but they will have been familiar in everyday life with discriminating and telling differences. Similarly, people may not be used to seeing the words of a sentence in jumbled order and have had practice in sorting them into the right order, but they will have been used to words, both written and spoken. It is arguable that practice in doing intelligence tests themselves will improve performance in

them, but this has been shown to be true only up to a limit. After five practice tests performance does not improve; thus if every child had an equal amount of practice in doing tests, the advantages of practice would be eliminated.

Man is distinguished from the animals by his ability to use language. It is because of his ability to communicate by speech that he has been able to rise above the apes. Since language plays such an important part in life it is inevitable that for the normal (as opposed to deaf) person many of the questions in an intelligence test must be verbal ones. Even when the test is given orally and the questions are concerned with numerical or perceptual problems, it is only by the use of words that the tester can tell his subjects what to do.

As has been shown in the past few years by studies of the linguistic abilities of people drawn from different classes of the community, the child from a home where parents have good vocabularies and are in the habit of talking a good deal about many and varied interests, and where an interest in books is encouraged, will have a much better linguistic start in life than a child from a home where conversation is limited and books are few. In the hypothetical case of the identical twins mentioned earlier, the linguistic experience of the child with the better home environment would be so much richer than that of the other that this alone would affect the differences in their performances. However good the inherited potential, if the environment is poor the potential will not be fulfilled. Conversely, where the inherited potential is relatively poor, a good environment will enable it to be fulfilled more easily and thus, in comparison with those people from poorer environments make it seem higher than it really is.

The intelligence test was at one time in favour as a means of selecting pupils for different types of secondary education because it was felt to be better for selection purposes than a test of attainment. The usual type of school examination is a test of what has been taught and what has been learnt; it is an attainment test. As teachers and the size of classes vary, performances in attainment tests can clearly be influenced accordingly; pupils who have been well-taught will have an advantage over those who have been badly-taught. The intelligence test was designed in order to eliminate the effects of

INTELLIGENCE TEST QUESTIONS

1. *Verbal Classification*

Underline the word that is different from the other three:

Blue Earth Red Green

2. *Verbal Relationship*

Underline the correct word:

Pig is to sty as dog is to (bone, kennel, lead, coat)

3. *Numerical Ability*

Underline the correct answer.

$4.329 \times 6.341 = 7.359169$ 27.450189

$= 14.302929$ 46.86329.

4. *Perceptual Ability*

Put a cross through the face that is different from the other two

5. *Reasoning Ability*

Underline the group of letters which is different from the other three groups.

AAAB AAAN AAAR AATV

good and bad teaching and to predict performance for the future rather than to test what had already been achieved. It may eliminate the specific effects of good and bad teaching, but it cannot eliminate the effect of a good or bad total environment. Nor will it always predict future performance accurately, for there are many other factors as well as intelligence which determine whether a student learns his work well.

It is generally accepted that five of the factors important in general intelligence are verbal comprehension, verbal fluency, number ability, perceptual ability, and memory. Conversation, being read stories and being given an ample supply of toys which help to develop the ability to discriminate, will assist a child's potential intelligence to develop fully *before* he goes to school. Formal teaching makes great use of the pupil's ability to remember. It is possible to remember material that has been well learnt without fully understanding it. Examinations can only too often be passed successfully as a result of the student having a good retentive memory. What has been learnt may be forgotten in a matter of weeks because it has never been fully understood. When we do understand we do not easily forget. The questions in an intelligence test rely far more on the subject's ability to understand than on his ability to remember. A test of attainment such as a school examination may, on the other hand, be a better indicator of readiness to work hard and be conscientious.

CHAPTER 5

REMEMBERING AND FORGETTING

WHY DO WE FORGET ?

If we ask a person to define what is meant by memory he will probably refer to it as a store. If we think of the brain as composed of some ten billion nerve cells and the total number of pieces of information that could be learnt in a lifetime of seventy years as fifteen trillion it is at once apparent that the store is insufficient for a one-to-one connection—meaning that one piece of information is located in a particular section of the brain. This problem of capacity can be understood if we take into account the ten trillion end-bulbs on the neurones (nerve endings) of the brain and the possibility of interconnection being made as each piece of information comes along. The fact is, that while details do appear to be 'wiped clean' from the memory store, studies of people under hypnosis and psychoanalysis suggest it may be wrong to assume that anything is necessarily forgotten for all time. Details of events which appear to have been forgotten can be brought back to memory, given the appropriate stimulus and co-operation. Whatever is stored deep in the brain, it is to all intents and purposes only a small proportion that is immediately accessible in the present. The ten-year-old has few memories of his life at the age of five; the details of most of what we learnt at school have gone by the age of twenty, and what enables us to do our life's work satisfactorily is merely continuous practice in a fairly set routine. The amount of information available for easy recall seems limited at any one time. In a new job we forget many of the details of the old one, and even the strongest memories of yesterday fade with the morrow. It is also very easy for material in the memory to be distorted so that we make mistakes when trying to remember.

At first glance forgetting seems to be due largely to the passage of time. There are however some conclusive arguments against this view. The strongest, and most obvious, example is that as we grow old our

clearest memories are not of recent events but of those of years ago. To the person of seventy what happened yesterday may be a confused blur, but he may well be able to recall accurately the details of some incident twenty years back. It has been shown experimentally that less forgetting takes place when sleep intervenes between a learning task and any test on it than when the time between is taken up with activity. The administration of an anaesthetic such as nitrous oxide, or hypnosis, also results in less forgetting. There is more forgetting when there is activity between the learning task and the test. Forgetting is caused by *interference* from the intervening activity.

EXPERIMENTS IN MEMORIZING

In experiments on memory psychologists often use nonsense syllables. A nonsense syllable consists of a vowel placed between two consonants in such a way that the three letters do not form a normal word. 'Yox' and 'zab' are nonsense syllables; 'yon' and 'zag' are not because they are used as words. Nonsense syllables are more suitable material for experiments than ordinary words are because they are neutral material for all subjects. Ordinary words have different degrees of familiarity for different people. Herman Ebbinghaus, a German psychologist who lived at the end of the 19th century, first used nonsense syllables in experiments. The following experiment demonstrates how interference causes forgetting.

Two groups of subjects of equal ability at memorizing are given one minute to learn a list of ten nonsense syllables. One group (the control) is then given a sheet of newspaper and told to put a line through all the letter 'e's that they can find. They are given this simple 'cancellation' task to stop them rehearsing the nonsense syllables they have just learnt. The second group (the experimental) is given a second list of ten different nonsense syllables to learn for one minute. Both groups are then tested on the original list. The control group's results will be better than the experimental group's. The latter will be confused by syllables from the second list. These syllables will interfere with accurate recall of the first list.

Had the control group in the above experiment been given a second learning task, such as learning sets of three digits, 259, 306,

NONSENSE SYLLABLES

Psychologists use nonsense syllables because ordinary words will be more familiar to some subjects (and therefore easier to learn) than to other subjects.

An experiment using nonsense syllables to demonstrate that similar material causes more forgetting through interference than dissimilar material.

Procedure

Group I learns list A for one minute. List A is then removed. The group then spends one minute adding up digits (a dissimilar task from learning nonsense syllables).

Group II learns list A for one minute. List A is then removed and the group learns List B.

Both groups are then asked to recall List A. Group I's performance will be better than Group II's, because syllables from List B will muddle Group II.

List A	*List B*	*Digits for Group I*
TAJ	SEB	3986452
ZIN	PIW	8617559
VEC	YEM	8543286
YOX	RAK	3245897
DAK	GOF	
JOF	XAL	
HUQ	ZUV	
WID	FOD	
WUV	MIJ	
KEP	HEP	

etc. instead of the cancellation task, they would still have performed better in the test than the experimental group because learning digits is *dissimilar* from learning nonsense syllables. It has been found that in this type of experiment the more similar two learning tasks are the more interference there will be.

Forgetting, which is due to a second learning task interfering with the first task, is caused by retroactive inhibition. The material of the second task acts back (retro) and inhibits (prevents) recall. Forgetting can also be caused by proactive inhibition where the learning of a first task acts forward (pro) on the second. Supposing the experimental group learns a list of ten nonsense syllables for one minute while the control group sits in silence or does some entirely different task. At the end of the minute both groups spend another minute learning a second list of ten nonsense syllables. Both groups are then tested on this second list. The results of the experimental group will again be worse than those of the control group, because syllables from the first list will interfere with accurate recall of the second list.

Let us now consider what can be done to make learning more effective so that our ability to recall is improved.

First and of greatest importance is the need to understand the principle at work in any problem to be solved. While it is true that young people in particular have naturally good memories (because of the comparative plasticity of their brains) even they cannot retain all that is required of them It may be that the intelligent pupil retains more by virtue of the fact that he can organize the material he is studying in such a way as to cut down the actual amount he has to learn by heart. We can illustrate this by a simple example of committing a list of numbers to memory. Suppose we are asked to learn the following set of figures

796 352 463 807

We could try to do this by learning the four sets off "parrot fashion". However a little analysis shows that to each of the first numbers in the four groups two is added to form the second number and three is taken away from that to form the third (nought in the last group counting as ten). What in fact we can now commit to

memory is the first number of each and plus 2 then minus 3—much less actual information than seems apparent at first sight.

Thus as learners, our task is to make the problem as meaningful as we can. The teacher's aim must be to present material so that the learner can grasp the principle which is inherent in it. This is not to say there is no place for learning by heart; arithmetical tables, grammar, even some poetry can be absorbed by being learnt mechanically, though we can argue that it will still be preferable to introduce the material initially in such a way that the learner understands the principle. What does seem undesirable is that students should commit to memory, techniques, or rule of thumb methods for solving problems, with the result that they learn how to obtain the right answers without grasping the logic.

Experiments have shown that material will be better retained if it is overlearnt; that is, if more time is spent learning it than is necessary to achieve bare mastery. Spending half as much time again pays off, though the experiments indicate that more than this amount of extra learning will produce a diminishing return. Learning will be more effective if there is a conscious effort to fix attention to the material. We could learn a poem for example merely by reading it over and over again. This method of reading is not as efficient as what psychologists technically call recitation—when one periodically attempts to recall the material by testing oneself, by saying it with the book closed or passage covered over. In recitation we are constantly seeing how much we have learnt and are also gaining practice in the eventual task, recalling from memory. It has been shown that distributing practice on a learning task over a period is usually more effective than concentrating the practice into one session. An hour a day for a week learning a poem, or learning to drive a car, will be usually more effective than seven hours consecutively. Understandably the massed practice will be more fatiguing, but there is also evidence of the need for a period of consolidation for the material being learnt to 'sink in', even though we are not ourselves consciously participating.

It is easier to remember what we understand than what we do not understand. It is also easier to remember what interests us than what lacks interest. The boy who is keen on sport finds that he remembers

the performance of clubs and individuals without having to make a special effort to remember them The material of a book which is presented in an interesting way will be absorbed. The reader will not have to make a conscious effort to remember it. He finds he has remembered it because it has interested him.

As we read the chapters of a book we find we remember the 'GIST' of what we have read. We also remember details which are presented in a conspicuous way. If you were to try to write down what you remember of the first sentence in this paragraph you would probably find you remember at least the word 'GIST' because it was printed in capitals and was made to stand out. If you now read and write down from memory what you remember of the following symbols 96532198w296, you will probably include the letter 'w', because it was different from the rest. The joke that enlivens the boring lecture, the news bulletin which mentions the death of a famous man, the lesson in which the teacher digresses to talk about his wartime experiences—these details stand out from the background of the routine performance and remain clear in the memory when the rest is forgotten. We remember the unusual, the different. A good lecturer or writer will present the essential points of his discourse in such a way that they stand out and impress themselves on his audience or his readers.

The set of eleven digits and one letter printed in the last paragraph is hard to remember accurately because it has no meaning. Experiments have shown that much practice is needed before a person can recall a group of more than eight digits accurately. Read out slowly and in an even tone the following group of eight digits and ask a friend to repeat it after you. He must not of course say anything until he has heard the whole group of eight.

69742961

It is unlikely that he got all eight right. That group of eight digits contained only nine syllables, '7' containing two syllables. The following sentence of 21 words contains 26 syllables 'When I looked out of the window I saw a hill on which there were many fields divided by stone walls'. If you ask your friend to repeat it after you you will probably find that he gets it correct or nearly correct. If you

were to read him the following which has only twelve syllables 'looked I of a saw when window I hill but the', you will probably find he does not recall all the eleven words. The jumbled version of the short sentence, 'When I looked out of the window I saw a hill' like the group of meaningless digits, is far harder to recall accurately than the meaningful longer sentence. In recalling the meaningful sentence we do not try to remember each word individually. We group the words as follows 'when . . . window', 'I . . . hill' 'on . . . walls' and we remember each group as one unit.

However meaningful the material, there is a limit to the amount that can be accurately and fully recalled by immediate repetition. If you try to recall a sentence of more than twenty-five words you will probably leave some out. If you try to recall a story of say 250 words much will be left out and even the sense may be altered. In a well known set of experiments F. C. Bartlett used a method known as Serial Reproduction to show the changes that take place when subjects are trying to recall a passage that is too long to be recalled in full. The first subject listens to the original story of about 250 words which he then recalls as best he can to subject No. 2 who then recalls what he remembers to subject No. 3 etc. Each successive version gets shorter and shorter until by the time the story reaches subject No. 10 it has probably been reduced to one sentence of about twenty words. In the course of being shortened details from the original often become mixed together and the sense may change. A story which described how two men ascended a mountain and were met by five boys at the top could easily end up as 'five men were on the top of a mountain'.

In the Serial Reproduction experiment details from the beginning of the story are often retained throughout. The listener is always attentive at the beginning and in his effort to remember he may rehearse what he hears at the start so that he can be sure of getting some part correct. The details at the end of the story may also be retained because these are fresh in the listener's mind. The first day at a new school or in a new job are likewise impressive, and details of what took place remain clear long after later events are forgotten. It is wise for any public speaker to start well and finish well if he wishes to impress his hearers. Examination candidates are always well

advised to take special care with the first and last paragraphs of their essay answers.

It is common for details to become distorted as we attempt to recall what we have observed. This is due to the tendency to bring our knowledge and previous experience into the incident we are trying to recall. We report what we think is likely to have happened rather than what did in fact happen. This tendency was well illustrated in an experiment in which some students were asked to recall the sequence of events in a lecture during which a stranger had entered the lecture room and taken a book from a shelf. After reading the book for a time he had then left the room and taken the book with him. The students knew there was a rule against removing books from the room. In reporting what had happened the majority said that the man had returned the book to the shelf before he left the room. They reported what they thought ought to have happened rather than what had happened. In another experiment a psychologist asked fifteen students to examine a picture carefully and then answer sixty questions about its details. The students were told not to reply to any question if they felt uncertain about the answer; yet even on the same day as they saw the picture nearly one in seven of the questions was answered incorrectly. They were given the same questions again on the fifth, fifteenth and forty-fifth days after seeing the picture and each time the average number of wrong answers increased till on the last occasion one in every five of the questions was answered wrongly.

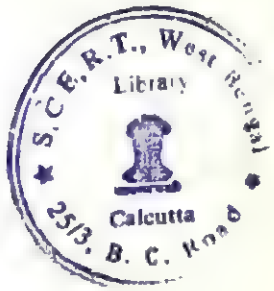
This last experiment showed that even when we are asked to pay careful attention we can be inaccurate in recall. We are much more likely to be wrong if we are asked to recall some event which comes into our line of vision when our attention is elsewhere. A man is walking along a pavement thinking of his destination, the weather, or the conversation he has just had with his girl friend. Suddenly on his right there is a screech of brakes and a crash. A cyclist is lying in the road and his machine has been badly damaged by a car. The man was the nearest witness to the accident and much may depend on his evidence. Yet it is very difficult for him to be certain of the exact sequence of events. The car and the cyclist came into his vision but he was not thinking about them until the accident had occurred. He

has to reconstruct what he thinks he saw. He can easily be misled if the questions put to him are phrased suggestively. The witness may be questioned in any one of the following ways: 'Did *you see* the cyclist give any signal?' Did *you see* the cyclist signal that he was going to turn right?' 'Did the cyclist give any signal?' 'Did the cyclist signal that he was going to turn right?' 'Did not the cyclist signal that he was going to turn right?' The first of these five questions is the least suggestive; the last is very suggestive, particularly if it is asked by someone in authority. What appears to be the same question can be asked in any number of ways. A clever questioner can often persuade people into 'remembering' that they have seen what he wants them to say they have seen.

Finally we should consider the way in which the word *remember* is so often used ambiguously. An obvious example is the phrase 'It is easier to remember faces than names'. What we should say is that it is easier to recognize faces than to recall names. It is in fact as easy to recognize names as it is to recognize faces and no more difficult to recall names than to recall faces. In recognition we have the material in front of us, in recall we have not. When we say 'I remember that man's face but cannot remember his name', we are in effect stating that his face is familiar, whereas the faces of the other people in the room are not. If we were presented with a list of names, among which was that of this man, we would most probably be able to recognize his name from the list just as easily as we can recognize his face from those other faces present with it.

School examinations invariably require recall from the pupil rather than recognition—yet for some students a recognition test might be far more suitable for their ability. Asking for the date of the Battle of Agincourt is a test of recall. Asking the pupil to underline correctly the date of the battle by recognizing it from a list of dates such as 1340, 1403, 1415, 1431, 1485, 1509 may possibly lead to the answer being obtained by guesswork, but in marking the test this can be compensated for by making deductions for incorrect guesses. Supplying the clues aids the memory and in a series of such questions, provided adjustments can be made to counteract chance success by guessing, such a test can be justifiably claimed as requiring knowledge, and may be more suitable for the less academically gifted

who find it difficult to commit material to memory. For, while what has been said about the need for understanding is true, Intelligence Quotients differ considerably and one of the factors in intelligence is memory. Some people seem naturally more gifted than others, either in their ability to memorize by the visual process, so that they see the material in their 'mind's eye' or by the aural process where it is the sound of the words they try to remember. Good visualizers clearly have a flying start over poor ones, especially for material that it is difficult to learn by ear, such as historical and geographical facts, the spelling of French or English words, and chemical formulae.



CHAPTER 6

MASTERING A SKILL AND MASTERING AN ACADEMIC SUBJECT

SKILLS

An infant is learning from the moment he is born, although it may be five years before he goes to school and is officially taught. Children learn a great deal in the first five years of life.

As the body grows and the brain begins to develop the infant learns to focus his eyes, to grasp things in his hands, to sit up, and finally (by about the end of his first year) to stand. He will learn these processes when he is mature enough for each of them, and in his own good time. Parents can help him to learn them, but not before he is sufficiently mature.

The exact age of maturity for each infant will differ. We should not force infants to develop but we can make sure that the opportunity exists for them to develop as their individual maturity develops.

We easily forget our own childhood and are therefore likely to assume that learning to use our limbs and to co-ordinate movements is effortless. The infant in fact experiences exactly the same sort of problems in learning to walk as an older child does when, for example, learning to ride a bicycle, or as an adult does when he learns to drive a car.

The learner, whether child or adult, always finds his initial efforts characterized by clumsiness and awkwardness. The nine-month-old grasps his spoon, plunges it into his plate, and as he jerks it up towards his face, either the food falls off or he bespatters his cheeks as he aims for his mouth. The one-year-old takes a pace forward and falls in a heap, picks himself up, takes another halting step forward and again collapses. As he has not far to fall and is unlikely to hurt himself, he finds it amusing and goes on trying until finally he learns to balance correctly. The young cyclist has a similar experience as he pushes jerkily with one foot on the pedal and the other flailing in

mid-air. The eleven-year-old at his first hockey practice lifts his stick, lunges forward, and if he contacts anything at all, it is likely to be a piece of turf rather than the ball. The car driver succeeds in switching on the engine, but the movements of his foot on the clutch or brake and of his hand on the gear lever show the same characteristics as when he is learning any of the other motor skills—namely clumsiness and exaggerated effort. Contrast the performance of the learner with that of the expert. The movements of the expert are always economical; the minimum physical effort is necessary. Correct timing characterizes the good gear change no less than it does the good stroke in tennis or cricket. The great athletes and swimmers progress gracefully. The good fielder throws the ball in from the boundary with a flick of arm or wrist, not with an effort-wasting heave.

Good physique, a gift of nature, plays a part in athletic performance. The limbs and muscles of some are more supple; in others the co-ordination between eye, brain, and limb is better. The talented are endowed in both respects. While they may get through the learning stage more quickly because of natural ability, initial awkwardness of movement is still usually apparent. Where it is not, the movements necessary for a smooth performance will be found to have been learnt in practising a similar skill in another sport. The novice squash rackets or badminton player may appear a 'natural' the first time he is seen on the court, but this will be the result of the practice he has had at cricket, tennis or some similar sport.

The upper brain, the neo-cortex, is responsible for at least initiating thought processes. In the learning stages, before movement has been perfected, we have to think exactly what to do. In our conscious effort to swing the bat or stick correctly, or to move the gear lever to the right place, we are using this part of the brain.

One of the questions in which psychologists are interested is the method by which practical skills are acquired. For example, they ask whether it is better for a learner to be shown a method for carrying out a technique or whether it is better for him to learn by 'trial and error'. Possibly both systems are needed. A small boy in our society learns to ride a bicycle by getting on it and trying to ride it. By practice over days or weeks he acquires the technique which depends above all on developing a sense of balance. But this 'trial and error'

approach is based on imitation of others whom he has seen bicycling. A child in a remote part of the world who had never seen a bicycle would not have any idea at all what it was for. A practical demonstration or even a film showing people riding bicycles would help such a child to know where to begin his 'trial and error' approach.

Correct instruction and correct initiation can prevent the wrong habits developing. Our correct use of skills depends very much on the development of the right habits. A girl who teaches herself to type purely by a 'trial and error' approach may only use four fingers at the most and is unlikely to learn to touch type. If later she decides she does want to learn to touch type she has to *unlearn* her previously acquired habits. Proactive interference from the old method may well make it harder for her to learn to touch type than had she never taught herself by a 'trial and error' method. The acquisition of a skill like touch-typing requires first the acquisition of simple skills which are then integrated into more complex skills. The typist first acquires 'letter habits', she learns to hit the correct keys. As she becomes proficient at this she finds she acquires 'word habits'. When she sees the word 'the' she finds that she strikes the letters 't-h-e' automatically, without consciously feeling for the individual letters. The third stage is the acquisition of 'phrase habits', such as 'Yours faithfully'. The sight of these two words sparks off the correct responses on the keyboard automatically without the typist thinking of the two words as separate entities. When people learn skills in stages as they do in typing they are said to acquire habit hierarchies.

The characteristics of the accomplished performance are smoothness, effortlessness and a lack of conscious thought; the movement 'comes naturally', whether we are typing, hitting a ball, driving a car, or playing a piece of music. Sometimes we are easily able to think of some other topic entirely while we are driving, and it is certainly possible for machine operatives or check-out cashiers in supermarkets to engage in conversation and still carry out their jobs without error. It seems possible that, while the cortex is needed during the learning process, once performance has been perfected the lower centres of the brain take over the function previously carried out by the cortex, and thus leave the latter free for the activity of talking or thinking about a different topic.

'Practice makes perfect', and it is by constant practice that sportsmen, musicians, and technicians perfect their arts. Learning how to assemble or take apart a piece of equipment is similar to learning the sort of skill we have been discussing. Many soldiers have been so drilled in taking apart a rifle and re-assembling it that both processes can be carried out at great speed automatically, even with eyes shut or in the dark.

If we get out of practice and, for example, give up driving for some years, or are bedridden for some months through injury or illness, we may have to learn to drive or walk again. The need to think what to do arises again; we find ourselves having to make a conscious effort to make the correct movements. This is irrespective of the fact that muscles have gone limp and legs are weak. Likewise, even when a skill has been perfected, there will be times when the cortex has to take over again and conscious effort is required. If the gear lever suddenly breaks off, the driver is confronted with a novel situation. He stops talking or thinking about something else and concentrates on solving the problem of what to do. If the batsman detects a googly in the bowler's hand, he changes his stroke. The cortex is available to cope with an emergency.

Reasoning ability, intelligence as it is sometimes called, will often enable skills to be learnt more quickly. Intelligence is considered to play as important a part in the mastering of skills as it does in the mastery of the traditional school subjects. When the technician has to reason, he has the materials needed for the solution of his problem in front of him. The games player has his materials with him, and the car driver or mechanic has his vehicle or its engine with him. He can see, touch, and move the parts. He can carry out the correct manoeuvres without having to express himself in words.

Where subjects are practical, such as dressmaking, cookery, carpentry and metalwork, learning *of* the processes of manufacture will be easier than learning only from theory. Similarly practical work in the physics, chemistry and biology laboratories will make the theory easier to understand—the actual work in itself should present less difficulty. The materials are at hand. The learner can use them—can practise his skill. Experiments may have to be written up or described, so that the instructor knows that the process has been

understood, but if there was one instructor for every student, the former could watch the latter doing the experiment, and the student could perform it correctly without necessarily ever using words.

However much the world needs men of action, it is man's facility in the use of language that has led to him being able to achieve greater heights than any other creature. While the technician may not have to carry out abstract reasoning nor communicate his ideas to his co-workers, the scientist will have to do at least one of these. Theory must precede practice at the highest levels. Pure reasoning involves working without the aid of materials, except for books, paper, and writing implements.

Thus it is not surprising that Grammar School curricula are still largely academic. Those who aspire to be managers or to hold posts where they are responsible for the welfare of other people must be able to communicate; they must be able to express their thoughts clearly both on paper and in speech. Knowledge of literature, religion, history, geography, economics, and other languages, may give a person a useful background from which to form his opinions about present-day events; but primarily what he receives as a result of studying such subjects is practice in marshalling his thoughts in order to solve problems. Learning facts is not necessarily more difficult than learning skills. Facts, like grammar and mathematical tables, can be learnt mechanically by heart and rattled off almost without thinking. But to be able to use facts in order to answer questions correctly is a far more exacting task. This is full-time work for the cortical areas of the brain; concentration is necessary; one cannot successfully carry out another task at the same time. In an art such as answering questions, however, the rhythm and smoothness which characterizes the well-learnt skill is far harder to achieve, because the materials, thoughts and words (however much practice one may have), have to be produced from the brain; they are not before one 'on the table', as it were. Recalling ideas in the correct sequence is itself hard. When solving complex theoretical problems the tendency to make errors that cannot be corrected is far more likely than when one is assembling a machine and can see that two pieces do not fit together.

ACADEMIC STUDY

Once we have learnt a skill—such as walking or driving— we do not forget it provided we have practice in using it. Once we have learnt the skill, we perform it best when we do it apparently automatically—without thinking. If we try to think consciously about the actual movements involved in, for example, going downstairs or changing gear, the performance will probably lose its rhythm and smoothness.

Much of school work, particularly in Grammar schools, involves words rather than things. It is true that practical work is done in laboratories, and that in workshops and craft rooms the emphasis is on making rather than on writing or reading, but even so descriptions of what is going on are often required and often totally necessary. With languages, whether native or foreign, with history, geography, scripture, economics, we are reading or listening, writing or discussing. We may make models, draw maps, and illustrate the work by diagrams, but most of the time we are dealing with words in one way or another. Even in mathematics and science, a good vocabulary and facility in using words is an aid to understanding the problems.

It can be argued that talking is itself as much a skill as the skills discussed in the preceding section. It is true that talking, like writing and reading, is a skill in so far as the actual technique of performing is concerned. Once the technique of reading is mastered, a child can read aloud or to himself fluently, in much the same way that he can, for example, run or dribble a football. Once the technique of writing is mastered, he can copy words from a book or even compose his own sentences without great effort or concentration. Such performances are comparatively easy. It is more difficult to gain a full understanding of what one is reading and to be able to reproduce it so accurately that another can understand it. Mastering this technique does make greater demands than mastering a practical skill. In the practical skill the movements are repeated again and again until they are known. There is nothing quite comparable in the world of practical skills to that of the art of reading an article or a chapter and answering an essay-type question about its contents—showing one has understood the important points.

Words, like numerical tables, can be learnt by heart. An actor must become skilled at memorizing lines—he has to have a good memory. He does not necessarily need to have great powers of reasoning or intelligence in order to memorize lines. Some school work does involve learning either by heart or well enough for the student to be able to reproduce the essence of what has been learnt. It is possible, of course, to obtain passes at examination level by having a good memory. There are some people who seem to have good memories as a gift of nature, rather than as a quality developed by hard work. They have only to look at a list of words or a page of notes to be able to reproduce the previously seen material with very little effort. Those who are most able in this respect are said to have 'photographic' memories, though in fact the 'reproductions' they are able to make are never as detailed or faultless as an actual photograph. There are other people who seem to have a 'natural ear'. They hear a song or a tune and can remember it with very little rehearsal. Practice may help to develop a good visual (eye) or aural (ear) memory, but basically these are qualities that some are born with and others are not. Individuals differ far more than is commonly thought.

To possess a good memory is a great advantage when it comes to revising previously learned material for an examination. Notes can be learnt for the exam and forgotten almost as soon as it is over. But those subjects in which this can be done are of less value than those which require the ability to reason. This is why mathematics and translations of passages which have not previously been studied ('Unseens') are more demanding exercises than the learning of grammar or notes: the former require conscious thought; the latter require little more than the ability needed to master a skill.

We learn in order to solve problems—in the widest sense of that word. In learning to drive, the problem is how to move the vehicle at the correct speed in the correct line; just as for the infant, the intrinsic problem is to move food to his mouth with a spoon or to propel himself to the toy cupboard as quickly as possible. By answering a question correctly we are solving a problem. We have learnt certain facts and we use those facts on which to base an argument. Whether we solve the problem to the examiner's satisfaction depends on the quality (not just the quantity) of our argument.

It is assumed by many employers that the student who has shown himself capable of answering questions (solving problems) about the correct use of English, in mathematics, and other subjects up to what is called 'O' level standard, will, with training, be able to solve the problems involved in banking, accountancy, teaching, clerical work, and similar occupations. If there are many applicants and the age of entry is 17, the requirements may be 'A' level—which standard or level will show the ability to solve rather more complex problems. Supply, demand, the qualifications of the majority of the applicants—these are the factors that determine the standards of entry. When there were less applicants for Universities than there are today it was possible to gain entry if one had the *minimum* matriculation requirements. Honours Degrees were finally obtained by some undergraduates who had entered University with only minimum qualifications. So great is the number of applicants now (because many more stay on to the Sixth Form in the State Schools) that the minimum qualifications have been raised. The number of potential applicants is thus reduced to manageable proportions by insisting on higher minimum standards. Those who fail to reach these minimum standards are not necessarily incapable of benefiting from University-type courses. In August 1968 a report in the national press noted that 24 out of 25 students at the West Ham College of Technology had obtained London University Honours Degrees in Psychology despite the fact that in 1965 they had obtained grades at 'A' level which were considered too low for University Entrance.

Employers are often unconcerned about the actual subjects studied at school or university (except where technical knowledge is required). They do not look only for *knowledge,* but for *potentiality.* The question they ask is not 'How much history, geography, philosophy, literature does this man possess?' but rather 'Will this man be able to solve the problems on the sales or personnel side that we have in store for him once *we have trained him?*' Has he the reasoning ability and has he the personality? His examination results will usually show the former; his performance at an interview or at a longer selection procedure, show the latter.

The day-to-day problems that we experience in dressmaking, metalwork, woodwork, gardening, demand reasoning ability, and

memory. But the materials one has to use to perform such work are in front of one. The *theory* that is *learnt* comes from practice. Care and accuracy are needed in the execution of practical work and standards of performance can be high or low, but because the materials are available the problems should be less exacting than those in mathematics, literature or other academic work where one is working with abstract data. In solving more abstract problems one cannot reduce the work to a mechanical exercise in which performance is accurate although the concentration may be elsewhere. The responses are not automatic; they require the type of top level attention and concentration that is needed in the stages of learning a skill, but which can later be dispensed with.

In life itself, the people who become managers and administrators are confronted by a variety of problems, no two of which are precisely similar. They have to think, to plan, to reason; the problems they are required to solve demand single-minded concentration; they cannot, as some operatives can, carry out their tasks efficiently, with their minds 'a thousand miles away.' Furthermore they are responsible, by virtue of their positions, for those working below them. Mistakes made by management affect operatives as well. Not only must those in responsible positions understand fully all that they are doing; they must be able to communicate effectively to others.

CHAPTER 7

ADOLESCENCE: ANOTHER IMPORTANT PERIOD

The vitally important years from birth to five are followed by a period which lasts, depending on the individual, for six to eight years during which the child is continually growing in self-confidence. By about the age of twelve children are, for their years, more self-assured and contented than at any other period of their lives. They are open, friendly, and unself-conscious. Their worries, although they may become severe at times, rarely last long.

Adolescence—the growing into adulthood—begins between 11-14 years; the exact age at which it begins depends on the stage of physical maturity which the individual has reached and on the sex (girls tend to begin adolescence earlier than boys). Adolescence lasts for at least six years; sometimes it lasts longer, until the early twenties.

The first sign of adolescence is a period of rapid growth in height and in length of limb, which often leads to young adolescents becoming clumsy and awkward in their movements. Their actions are less co-ordinated than in earlier years because arms and legs have grown much longer, and thus move much further than their owners have come to expect from past experience. It is common for an adolescent to find himself tripping up or spilling things (and so feeling embarrassed and self-conscious).

Changes occur during this period of rapid growth which are observable by other people as well as by the boy or girl in whom they are taking place. The development of the hips, part of the changes in preparation for child bearing, causes girls to become knock-kneed and thus awkward when they run. Breast development can be such a source of embarrassment (as well as of pride) that girls try to hide it by stooping forward; thus they may become round shouldered. Boys have to endure changes in their voices. For a few

weeks, while his voice is breaking, a boy cannot be sure whether his words will come out high pitched or low pitched. He will do his best to avoid speaking in public so as not to be a source of amusement to his contemporaries as well as of embarrassment to himself.

The period of rapid growth precedes the maturing of the sex glands. The maturing of the sex glands slows down other growth, which accounts for the fact that those who mature young, though initially tall for their age, stop growing early in life and may finish up short and stocky as adults. Conversely those who mature late sexually may become tall adults. The maturing of the sex glands shows itself first by the onset of menstruation in the girl and by emissions of spermal fluid in the boy. These events, unlike the other physical changes so far mentioned, can be concealed from other people. It is thus possible to 'suffer in silence' the natural distress which their onset can bring. Unless parents or teachers explain with understanding and sympathy that these events are part of normal development and happen to everyone, it is possible for an adolescent to be ashamed and bewildered by them.

The sexual organs are themselves influenced by the development of sexual gland secretions in the pituitary gland at the base of the brain. This gland provides the gonadotrophic hormone which originates sex feelings and stimulates the gonads (testicles) in the male and the ovaries in the female. This development in the pituitary enables sexual arousal to take place by internal stimulation—thinking and imagining. Before adolescence arousal is only possible through external stimulation, by the sex organs being rubbed by hand or by clothing.

Masturbation (manu sturbation, rubbing by the hand) is practised at some time or another by most boys and by some girls. It is not considered to be physically harmful unless indulged to excess or over a long period when normal sexual relationships, as in marriage, are possible. Even then, the harm is not because of the act itself, but rather because the individual's need to indulge in an auto-erotic (self-loving) activity shows an unhealthy preoccupation with self. Developing an interest in something or someone outside the self, hobbies, sport, work or religion, or a member of the opposite sex, turns attention away from self and hence away from masturbation.

In the early years of adolescence, young people seek the company of others of their own sex, rather than of the opposite sex. This stage is called homosexual (similar sex) as opposed to the later heterosexual (other sex) stage. The use of the word homosexual in this context must not be taken to imply that there are sexual relationships between members of the same sex.

The adolescent homosexual stage itself divides into two. Initially, the attraction is for the group. Boys of thirteen are seen ganging together and becoming group conscious for the first time. The thirteen-year-old, for example, will not 'tell' on his class mate guilty of some offence; the pre-adolescent eleven-year-old will be prepared to do so. There is loyalty to the group, as seen in organizations such as the Scouts; there is appreciation of those who lead by example, rather than by theory, and an unwillingness to dress or behave differently from one's contemporaries, at least while one is with them.

The second part of the homosexual stage is characterized by attachment to an individual of the same sex rather than to the group; usually it takes the form of choosing a close friend of the same age, though the attraction may be towards an older person. There is pleasure in the company of the admired or befriended individual, but not necessarily any wish for contact of a sexual nature.

To pass through this homosexual stage is natural. To become fixated in it may lead to a person becoming homosexual in the sense that he wishes for sexual relationships with members of his own sex. Some psychologists have suggested that such homosexuals have inherited a greater number of feminine genes than the normally sexed male, that they are born homosexual. This may be true but the evidence for this is inconclusive. In every male there are female characteristics and in every female there are traces of male characteristics. Some men have more of the female physical make-up in them than other men. Conversely, some females have more of the male make-up in them than others have. There are very rare cases where the balance of the inherited male/female genes is so marginal that a sex change occurs during life. But it is not the rule that any particular physical characteristics make a person homosexual.

It is possibly early experience, as much as inheritance

which causes a man to become fixated at the homosexual stage and to find that he wants to indulge in sexual activity with other men. But, once again, the evidence is not conclusive. A doting mother may spoil her son so much that he believes all other women are inferior to her. Since he cannot find a satisfactory sexual outlet with other women, he turns to members of his own sex. Alternatively, a mother may treat her son so badly that he turns not only against her but against all women. He avoids the company of women and turns to his own sex for comfort, love and also seeks sexual satisfaction therein.

There are other ways in which the environment can bring out the latent homosexuality that is (to some extent) present in all people. Being educated in a boarding school for boys only may mean that until he leaves at the age of eighteen or older a boy has no opportunity for female company for the two thirds of the year that he is at school. He may thus continue to be attracted by members of his own sex after the age when the adolescent at a day school becomes heterosexual in outlook. Such attraction does not mean that he will necessarily become homosexual in adult life. A group of boarding school pupils who discussed this question felt that homosexuality was due not to the boarding school environment, but rather to the individual's particular personality; this was the result of his total environment, including his home experiences. They also felt that the long school holidays and the opportunities for term time leave gave sufficient opportunities for getting to know members of the opposite sex.

Just as the first homosexual stage of normal development showed group consciousness rather than attachment to a particular individual, so in the first heterosexual stage the interest is in members of the opposite sex in general rather than in one member in particular. Loyalties and affections change rapidly during this period when boys and girls are both getting to know one another and also getting to understand themselves; by comparing their friends each can more easily sort out in his own mind the type of partner for whom he is really looking. The established tradition of monogamy and the emphasis placed on family life influences the behaviour of the adolescent. The eventual goal for most is to marry. Each time he 'goes steady' the young man begins to think of a lasting relationship,

engagement followed by marriage—although he may 'go steady' a number of times before he finally meets a girl who wishes to share the rest of her life with him as much as he wishes to share his with her.

The adolescent is to a large extent, but in a different way, as dependent on adults as he was in earlier years. Yet between the ages 14-16 he often begins to think that adults live in a different world and that his interests can never coincide with theirs. Suddenly a gap is created between the generations, but this gap is not due to disparity in age itself.

The age gap is widest between grandchildren and grandparents. There may be disparity in age from forty to eighty years between the generations; nevertheless firm friendship is quickly established and the closeness of the relationship may be stronger as the age gap is greater. Small children respond spontaneously to the love and affection which the elderly display towards them and this mutual love and trust can be an important factor in the growth and development of the very young.

With adolescence comes self-consciousness and an awareness of the difference between other people and oneself. A man may be thirty-five when his son is eleven. When the boy is fourteen he may think that his parents are living in a different world—they are 'square'. Yet only three years have elapsed since he was enjoying their company and their world at his age of eleven. A sixteen-year-old will charge a thirty-year-old with living in a 'different generation' and being completely out of touch. He might consider the situation in six years' time when he is twenty-two and the other thirty-six, when they are on an age level again. The gap will be closing.

It is inevitable that in their efforts to become independent and responsible to themselves, adolescents will come into conflict with those in authority, particularly their parents and teachers. A discussion group consisting of boys aged 15-16 began by one member asking, 'Why do my parents stop me watching 'Top of the Pops'? He wanted to be responsible for what he watched on television. His parents thought otherwise. The discussion ranged around this topic until another asked, 'Why do my parents object to me being out late?' The frustrated pop music fan then exclaimed 'My parents don't

mind my going out!' Each set of parents insisted on certain rules or procedures being kept, and yet made no objections to practices about which other parents were stringent. Each set showed some tolerance and some intolerance, but in different situations. But the most important point that arose from the discussion was made with the sensitivity that is characteristic of the best side of adolescence. 'Come to think of it,' said another boy, 'it cannot be easy being a parent!' The exchange of views and ideas had made him see the situation from the other side, and realize—perhaps for the first time—that parents have a difficult job!

We talk about what we feel to be important. For adolescents it is often pop music, or late hours, hair styles, or clothes. These are some of the topics that come up spontaneously during discussion groups. The presence in such a group of an adult who understands the interests of adolescents, even if he does not share their enthusiasms, can help them to retain a balanced and objective outlook. Similar discussion groups among parents can help them to understand why their adolescent children's outlook and behaviour is more influenced by that of contemporaries than by the views of parents and teachers.

Since the beginning of time it has always been true that the younger generation has been critical of the older and the latter have suspected that things are changing for the worse. If progress is to be made there must be criticism. It is important however that there is discussion between members of the different generations; that views are exchanged, and that each is ready to learn from the other; only thus can the generation gap be bridged.

Communication enables responsibility to be shared. Fifteen and sixteen-year-olds accept and turn to good account the responsibilities given to them in secondary modern schools. At public and grammar schools it is usually the seventeen and eighteen-year-olds to whom responsibility is given, but fifteen-year-olds in such schools are fully capable of showing a considerable sense of responsibility if suitable jobs are available for them.

Giving an adolescent responsibility, whether at home or at school, creates a bond between him and the adult who entrusts the job to him. There will of course be changes of interest; the initial enthusi-

asm will not be maintained. Yet to cope with one's own lack of enthusiasm is something we all have to learn.

The adult, whether in the social life of a school, a youth club, or the home, can often be more helpful if he lets the adolescents organize their activities rather than take an active part himself. His role is to be present so he can be consulted when needed. For example, the housemaster in a boarding school can leave to the senior boys most of the routine duties, but his presence is necessary; he has to take the final responsibility.

A parent has to be like a good chairman at a meeting, seeing all sides of the question and trying to encourage the committee members to provide the answers themselves. It is a difficult role because a parent is emotionally involved in the well-being of his children. What surgeon would operate—unless in emergency—on his own child; what teacher likes to tutor his own children; what parent can really see the development and the problems of his son or daughter as they need to be seen, clearly, dispassionately, objectively? Discussion between parents, teachers, and other interested adults can be as mutually helpful as those between adolescents and adults. It is only through discussion that the lines of communication can be kept open.

CHAPTER 8

EMOTION AND HOW IT IS MEASURED

The word 'emotion' means literally 'movement out' and in many of the observable signs of emotion movement can be seen. Even when movement cannot be clearly detected by the eye, it can sometimes be detected if we investigate the physiological changes going on inside the body. We may first consider the more obvious outward signs of emotion, and then the inward changes that can best be demonstrated by the use of machines.

In everyday language the use of the word emotion is often confined to those signs which show distress—tears, shouting, blushing and similar behaviour. The psychologist will use the term to cover a much wider field than this. One investigator who was interested in the varieties of facial expressions, has suggested that emotion displayed by the face can be divided into six categories:

(1) Love, happiness, mirth
(2) Surprise
(3) Fear, suffering
(4) Anger, determination
(5) Disgust
(6) Contempt

One category can merge into another and at times it may be difficult to judge exactly what someone is feeling from the expression on his face.

Another investigator wanted to know which part of the face, the mouth or eyes, gave the better indication of the emotion experienced. He put his experimental subjects into situations in which they displayed various emotions and then took unposed photographs of them. He then cut photographs of the same subjects in two and joined the bottom half of one facial expression to the top half of another. He found that the total expression of the new picture consisting of the two halves tended to be judged according to the

expression of the mouth rather than the eyes. For example, a face consisting of eyes from an original photograph indicating determination and a mouth from an original photograph indicating laughter appeared to be laughing.

In our society, the extending of the lips in what is commonly called 'a smile' is usually taken to be a sign of pleasure. Among the Chinese this expression is used—among other expressions—to show anger. Such a finding is important because it shows that the meaning attributed to the expression used in smiling is learnt. To extend the lips in this way may be instinctive. It is culture that determines how the gesture is interpreted and what it is accepted to indicate. We learn the habitual modes of expression that are handed down in our particular culture. Generally, similar facial expressions do indicate similar feelings. Yet if such actions as puckering the brows or narrowing the eyes are learnt, (even unconsciously) we cannot be sure that facial expressions mirror exactly the feelings that are being experienced.

So far we have only considered signs of emotion which are within conscious control. We can, for example, usually stop ourselves crying, and laughing if we are determined enough to do so. But there are other types of emotional expression such as blushing or perspiring which are not under the same degree of voluntary control. We cannot easily exercise control over blushing or perspiring because of the changes taking place inside our bodies. If we blush, it is because blood vessels are dilating due to a swifter movement of blood through the capillary blood vessels. If perspiration forms, if we have 'goose pimples', if we tremble, if our pulse rate increases, if breathing becomes deeper, or if our mouth becomes dry, in all these signs of emotion there are physiological changes taking place inside the body. Invariably we are able to feel the effects of the changes as, for instance, when we feel our heart beating more quickly; theoretically we should be able to see changes as well as feel them. If we were able to see the linings of our stomachs, we would be able to see changes. In the case of a particular patient whose stomach was able to be investigated, it was found that when he became angry and there was an increase in the secretion of hydrochloric acid, the lining of the stomach became red and inflamed. When this same patient became

afraid or depressed the lining of his stomach became pale and there was a decrease in the secretion of hydrochloric acid.

Emotions such as anger and fear are closely linked with biochemical change. At the end of the last century the American psychologist William James, and the Swedish psychologist Lange, independently drew attention to the relationship that exists between the outward expression of emotion and the inward physiological change. The feeling and the change take place together, or if one of the two *has* to take place before the other, it is the physiological change that comes first. This part of the theory has long been disproved, but what James did at a time when psychology was still 'mentalistic' was to call attention to the importance of bodily changes.

James influenced another scientist, Walter Cannon, to begin research under laboratory conditions in order to find out the precise nature of the physiological changes that accompany emotion. Cannon observed that when animals were faced with a situation which caused them pain or rage or fear, physiological reactions took place in their bodies to prepare them for either 'fight' or 'flight'. The physiological reactions were as follows: when the cortex of the brain recognized the threatening situation, it sent a stimulus along the sympathetic part of the autonomic nervous system to the adrenal glands in the abdomen. These glands secreted the hormone adrenalin into the blood stream. To quote Cannon's own words, 'Respiration deepens; the heart beats more rapidly; the arterial pressure (pressure in the arteries) rises; the blood is shifted away from the stomach and intestines to the heart and the central nervous system and the muscles; . . . sugar is freed from the reserves in the liver; the spleen contracts and discharges its content of concentrated corpuscles, and adrenin is secreted from the adrenal medula.' The secreted adrenin (adrenalin) helps to distribute blood in abundance to those parts of the body which need the additional energy in order to bring about intense physical effort, the heart, the brain, and the limbs.

Cannon also observed that there were a few physiological changes that could not be ascribed to adrenalin. He decided that there must be other substances playing a part in the changes, but he did not discover what these were. Some forty years later, in 1948, B. F.

Tullar and M. L. Tainter succeeded in isolating a second substance secreted by the adrenal medulla. They called this nor-adrenalin, to distinguish it from adrenalin. Nor-adrenalin has only one effect; it stimulates the contraction of small blood vessels and increases the resistance to the flow of blood.

A few years after the discovery of nor-adrenalin, a team of psychologists at the Harvard Medical School carried out a number of experiments which eventually showed that the two different hormones, adrenalin and nor-adrenalin were associated with different emotions; adrenalin, with fear, nor-adrenalin with anger.

While some people may react to stress *more* with fear and others react *more* with a display of anger, both emotions are found in all people. In a final investigation carried out by the Harvard Medical School, the experimenter devised situations in which the same subjects were on the first occasion made to feel angry and on the second occasion made to feel afraid. It was found that when they were in the angry state, their physiological reactions were similar to those produced by an injection of nor-adrenalin, and when they were afraid their reactions were similar to those produced by an injection of adrenalin. This proved that the physiology was specific for the emotion rather than for the person; in other words, the feeling of anger or of fear brought about the secretion, in the case of anger, of nor-adrenalin, and in the case of fear, of adrenalin. If we ask how this happens, we need to understand the workings of that part of the brain known as the hypothalamus. U. S. von Euler, working in Sweden, found that if one particular area of the hypothalamus was stimulated, the adrenal glands secreted nor-adrenalin; if a different area of the hypothalamus was stimulated, the adrenals secreted adrenalin.

Von Euler also investigated the proportions of these two hormones found in animals. He found that the lion (an aggressive animal) secretes a relatively high amount of nor-adrenalin, whereas the rabbit (a timid animal) secretes a high proportion of adrenalin. Domestic animals and wild animals such as the baboon that live very social lives, are also found to secrete a high proportion of adrenalin.

This last evidence suggests that as aggression is lessened during domestication and socialization there are physiological changes. Is

this theory supported by reference to human behaviour? As people become more civilized, do they tend to secrete more adrenalin and less nor-adrenalin?

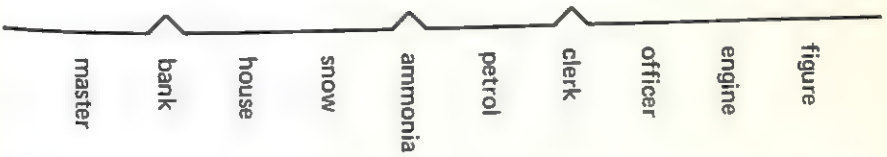
Bernt Hokfelt and G. B. West have found that the adrenal medulla of infants contain proportionately more nor-adrenalin than the medula of older children. The human infant is noted (despite his other more endearing characteristics) for his tantrums and periodic fits of rage. As he is 'civilized' through the efforts of his parents and teachers he begins to display less outward aggression of this type. Instead he becomes self-critical and turns his anger upon himself. His change of attitude affects the physiology in his glands. The proportion of nor-adrenalin decreases while that of adrenalin increases.

The importance of these kinds of psychological investigations is very great. While it is true that it is the prior mental attitude that causes the brain to affect the adrenal glands and these in turn to affect the blood, it is also possible to alter behaviour by the correct administration of drugs. The more that physiologists can discover about the workings of the body, the easier will be the work of psychologists, doctors, social workers and educators.

Modern methods of measurement enable changes in breathing depth or heart beat rate to be recorded on a machine. There is also evidence that emotion is shown even when such changes as heart beat rate or breathing depth are not apparent to the subject himself. A device called a galvanometer measures what is called the Galvanic Skin Response or G.S.R. Electrodes are attached to a part of the skin, usually the palm, and the amount of resistance to a very small charge of electricity is recorded. Experiments have shown that there is a measurable drop in the normal resistance level when subjects are affected emotionally, even though they are totally unaware of any physiological changes or of feeling emotionally affected. In one experiment 50 subjects were in turn presented with 100 words and after each word asked to respond with the first word that came into their heads. As they responded, so their G.S. Responses were recorded. To words such as carrot, bury, hunger, white, class, flower, pond, pencil, swim, the resistance level as recorded on the galvanometer was so high that the needle only rose to 18. On the other hand, the stimulus word 'kiss' caused such a lowering of resistance

that the needle rose to 73, on average, while 'love' caused it to register 59, 'marry' 58, 'divorce' 51 and 'woman' 40. These words are clearly more emotive than the others mentioned, but not calculated to cause blushing or a noticeable increase in heart rate. Yet the G.S.R. indicated physiological change due to the very slight and normally imperceptible increase in sweat secretion when these words were perceived.

The G.S.R. may also be used to discover whether a person is telling the truth. The 'good' liar may not show any of the obvious signs of emotion, such as blushing or anxiety, but there is evidence that he cannot prevent himself responding differently to the galvanometer when he is telling a lie than when he is telling the truth. Suppose he is suspected of robbing a bank by throwing ammonia at the faces of the clerks. A list of words is prepared for him and he is asked to say the first thing that comes into his head after he hears each one. Most of the words are 'neutral' words, but because of their association with the crime the words 'bank', 'ammonia' and 'clerk' are 'emotionally loaded'. As the list is read to him the G.S.R.'s would show this sort of pattern on the recording apparatus.



A lie-detecting machine is in fact a device for recording the responses to certain stimuli. As well as the G.S.R., a pneumograph, an instrument for recording respiration, or a sphygmomanometer, used for recording blood pressure, can also give indications of lying. If a subject is lying, the instrument shows a suppression of respiration and an increase in blood pressure immediately after his answer. Seconds after the answer there may be both a sharp fall in blood pressure and heavy breathing due to the relief felt that a dangerous point has been passed with apparent safety.

Such methods of lie detection are described by the term 'modern' and may not even yet be used very much by departments of criminal investigation. Yet for a long time people have known that an inward

emotional state can be used to detect truth from falsehood. Anthropologists who study primitive tribes have come across witch doctors who use the 'rice technique' rather than any modern sophisticated method. The suspects are lined up in front of the witch doctor who harangues them about the magic which will discover the murderer and how the guilty one has no chance of escape. After this initial 'brainwashing', they are given a bowl of rice each and ordered to eat it. The guilty one is unable to do so and thus gives himself away. Alarmed by the talk and his own sense of guilt he finds his mouth dry and totally lacking the saliva which is essential for chewing rice and swallowing it. He is at the mercy of his emotions and his salivary glands!

CHAPTER 9

FEAR AND PAIN

If we did not have the capacity to fear, it would be difficult for us to survive. The infant crawling about the house is ready to explore the fire, the electric plugs, and the gas taps. In time he learns to avoid being curious about these and similar potentially dangerous apparatus. Punishment or persuasion leads to him becoming less curious till finally he takes no more notice of them. Were he born without the instinct to avoid what the psychologists term noxious or harmful stimuli, then he—and we as adults—would continue to live dangerously. The particular objects and situations that the child learns to avoid are the result of conditioning, but conditioning is able to be effective only because the child has the ability to sense or experience pain and thus to take avoiding action and show fear.

Observation shows us that early fears are often the result of contact with the strange or unknown. A sudden loud noise will produce the signs of fear in a human infant. A strange object will bring out the signs of fear from an infant monkey. Children at certain stages of their lives (soon after the age when they recognize and know their own parents) will take fright at strangers and cling to their parents in the same way as a monkey will cling to its mother. If the mother is not there the monkey will take comfort from a soft woolly toy—a form of mother substitute. It is (initially at least) the unusual that is frightening.

In a well known experiment the American psychologist J. B. Watson demonstrated how an infant could become afraid of an animal. He first showed a nine month boy a white rat. The boy displayed no sign of fear. Watson then made a loud noise by striking an iron bar behind the infant. The noise alarmed the infant. In the next stage of the experiment he displayed the rat to the child just half a second or so before making the loud noise. He did this for a

number of occasions. Soon the production of the rat alone was sufficient to bring out alarm symptoms from the boy. He had been 'conditioned' to fear the white rat by associating it with the loud noise which he already disliked.

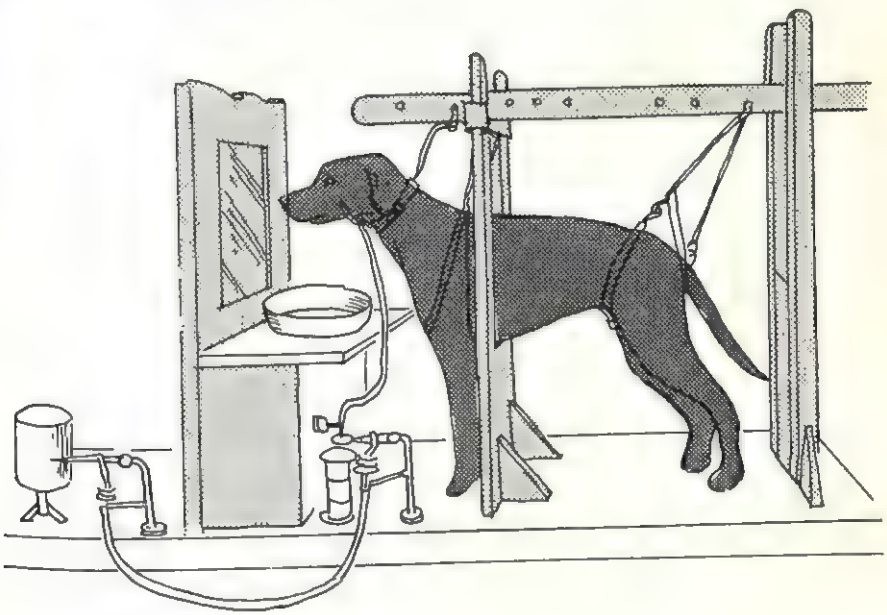
A conditioning experiment such as that described above makes use of two stimuli and a response. The stimulus which spontaneously elicits (brings out) the response is known as the *unconditioned stimulus*. The noise occasioned by hitting the iron bar was the unconditioned stimulus and it elicited the response of alarm from the boy. The *conditioned stimulus* was the sight of the rat, to which the response 'alarm' became attached as a result of the two stimuli being closely connected together in time. If conditioning is to take place it is essential that the conditioned stimulus is presented to the subject not more than half a second or so before the unconditioned stimulus is presented. If the time gap is greater the necessary association will not be formed.

Much of the early experimental work in conditioning was performed by the Russian physiologist Ivan Pavlov who was initially interested in investigating physiological activity in the brain. His most famous experiments involved conditioning a dog to salivate to the sound of a bell or the appearance of a light. The unconditioned stimulus was food which when presented to a hungry dog elicited the response of salivation. After a number of paired presentations of the sound of the bell or sight of the light (the conditioned stimulus), with food, the dog began to salivate to the conditioned stimulus by itself. To ensure that the dog attended to the conditioned stimulus Pavlov found it necessary to have the room fully sound-proofed and the dog securely harnessed to the experimental apparatus. Pavlov used a reward stimulus, food, in order to effect conditioning. V. M. Bechterev, a contemporary of his, used punishment, fear of electric shock, to effect conditioning in his subjects. He paired electric shock to the leg of a sheep or goat with the sound of a tone in such a way that the animal learnt to lift its leg to the sound before the shock came. In all such experiments conditioning depends on the formation of associations.

Association can cause fears to spread. Supposing a child were harshly treated at home and was always taken to the same room for

punishment to be administered. Gradually the room itself would take on unpleasant associations. The child would dislike ever going into it. If a child had an unpleasant accident while playing with one particular toy, it is likely that this toy and possibly similar toys would in future be avoided. If at school a teacher is unpleasant, and punishes unduly and unreasonably, the pupil may become conditioned to dislike the subject for which that particular teacher is responsible.

Many fears have their origin in childhood, even though the cause is forgotten. With the onset of adolescence situations which have so far not caused fear may at the least cause acute anxiety. The term



Apparatus used in Pavlovian conditioning

'anxiety' is used by psychologists to denote a general state of apprehension, not related to any specific object.

Self-consciousness brings with it the fear of failure. A conscientious student may have such anxiety about failing an exam that he is unable to think coherently and recall the facts he needs in order to write satisfactory answers. When he leaves the examination room, knowledge comes flooding back to him because tension is resolved

and he is no longer trying too hard. To take another situation, fear of failing may prevent a young man trying to make conversation with a girl whom he thinks attractive. He fears she may laugh at him or in some way reject him, so he has not the courage to try. When a man becomes sexually impotent one frequent cause is his fear of failing in the attempt to assert his masculinity. We rationalize in this way—to give up the attempt may be less damaging (to self-prestige) than to risk failure.

An eighteen-year-old once asked why he feared having to read aloud in public. The causes could originate from many different reasons, previous criticism of his vocal efforts, weak vocal chords which prevented him talking loudly, a dislike of doing anything for the first time, or just the feeling that he was different from other people and that no one else experienced this fear. But this young man feared that he would not be adequate to the occasion and that he would be compared adversely to others who were able to perform in public—and perhaps ridiculed. The advice given to him was that he should put in a good deal of practice in reading aloud—first in a room alone; he should then read aloud with one or two people present and gradually increase the size of his audience and the size of the room until he got near to the actual situation that he was required to face. The advice was effective.

A woman who had a phobia (the name given to a strong fear) was able to solve her problem as a result of the deconditioning treatment given to her. Her phobia was of furs, touching them, no less than wearing them. This caused her obvious embarrassment and interfered with her social life and she wanted something to be done about it. First the psychologist ascertained what sort of material she could endure touching, for example an ordinary piece of cloth. She was then brought into contact with other pieces of cloth, each one in succession of a material more like the texture of fur than the last. Through the very gradual changes that were being introduced to her she eventually found, after some months of deconditioning treatment, that she could touch the fur without anxiety. For such treatment to be effective it is very desirable that the subject should co-operate. If a person does not want to lose his fear, it is doubtful whether any treatment can help him do so.

Undoubtedly those adults who have a fear of spiders, cats or birds, were either frightened by some sudden movement of one such creature themselves when young or were in the company of another person who reacted with anxiety. One does not necessarily need a personal experience in order to be conditioned to fear. Children, particularly, are affected by the moods, as much as by the words, of their parents. A feeling of anxiety can transmit itself to a child even though no words are spoken, or if the child is too young to understand the words.

SYMPTOMS OF FEAR

In combat men carry on with their duty despite their fears.

To the question:

'During combat missions did you feel . . .'	*Percentage who answered 'Yes'*		
	Often	*Sometimes*	*Total*
A pounding heart and rapid pulse?	30	56	86
Dryness of the throat or mouth?	30	50	80
Nervous perspiration or cold sweat?	26	53	79
Need to urinate very frequently?	25	40	65
Weak or faint?	4	37	41
Unable to concentrate?	3	32	35.

Based on reports of 1985 flying officers and 2519 enlisted fliers of World War II. (After Shaffer [1947].)

During the last war investigations on fear were carried out on bomber crews and it was found that all personnel showed at least some of the symptoms of fear—quickening heart-rate, loss of colour, sweating, while others experienced 'butterflies in the stomach' and a small percentage the loss of bladder control. War situations are

fear-provoking and even when men win V.C.s and carry out acts of bravery it is not to say that they are fearless. They carry on with duty despite their fears. Their fears are real enough, though it is true that concentration on the task in hand will help to remove them. For certain people the fear of disgrace is greater than the fear of injury.

Most people in everyday life have some fears. The fear may be of heights or of water or of spiders or slugs—each of us has had different experiences so each of us will have different fears. We learn to live with them and are not greatly inconvenienced by them. We should avoid the obvious temptation to laugh at the more humorous (to us) fears of other people because we do not know fully the source of the environmental stimuli that have caused such fears or how we ourselves would respond had we had the same experiences.

There is one fear that most people do have—the fear of death. There is nothing laughable about that and it is extremely difficult to be philosophical about death and to dispel the fear. Once again, it is the unknown, the strange that worries us. We are most afraid when we are anticipating that something unpleasant will happen; the approach of the reality is usually not so hard to bear. Death has been likened by some philosophers to sleep, of which we are not afraid. People who have nearly died through drowning or in illness have experienced in what seemed their last moments of consciousness a kind of peace and contentment. But it is probable that if there were no fear of death or if we were certain of a future life of eternal happiness (whatever we did on earth) we might be less inclined to live fruitful lives as mortals.

PAIN

The sensation of pain, like the sensations of warmth, cold and pressure, the three other cutaneous (skin) senses, is experienced when nerve endings beneath the skin are stimulated. Physiologists have discovered that the nerve endings which act as receptors of pain and transmit the 'message' of pain to the brain, are different from those that receive the other three sensations. The pain receptors are called free nerve endings to distinguish them from the other types which end in a kind of rounded corpuscle or bulb beneath the skin.

Usually when a stimulus is applied to the skin, more than one sensation is experienced since more than one type of nerve ending is affected. If sufficient care is taken it is possible to define the points above the free nerve endings where pain only will be felt.

The sensation of pain acts as a warning that a harmful stimulus is affecting us. If we did not feel pain on touching a live coal we should keep our fingers on it that much longer until the skin and flesh became damaged. The pain that we feel causes us to take action to avoid the danger. Pain in a tooth warns us that the health of the tooth is bad and enables us to take action before the whole tooth is damaged beyond repair. Pain in the stomach warns us, for example, that the appendix has swollen or that an ulcer is beginning to form. Pain is useful and necessary in that it indicates where trouble is and enables remedial action to be taken. If the nerves that pass the information are damaged, or are deadened by means of a local anaesthetic, then pain is not felt.

In order for pain to be felt the 'message' has to be carried via the *a*fferent nerves to the brain from where it is despatched along the *e*fferent nerves to the muscle where the stimulus was first applied. Just as vision and hearing have particular parts of the brain responsible for them, so does pain. These 'pain areas' are deep inside the brain and have been discovered as a result of techniques for brain stimulation which were perfected as recently as the 1950's. Using rats as the experimental subjects, tiny electrodes were implanted deep in the brain. Electrical stimulation was found to bring out pleasure responses or pain responses depending on the area stimulated. When electrodes were implanted in the septal region (a portion of the brain deep in the central part) and the rats were given the opportunity to stimulate themselves, they continued to do so for so long that the action could only be assumed to be 'pleasurable' for them. But when the electrodes were implanted in the posterior region of the hypothalamus (near the septal region) they stopped the self-stimulation, thus indicating that it was non-pleasurable. Other experimenters, using cats as their subjects, found that they could be *taught* to terminate electrical stimulation of the brain in a number of areas and thus avoid the pain that they were experiencing. Since there is evidence for the existence of pleasure centres in the brain of

humans, there are probably also pain centres. But of this we are not yet certain.

There is thus evidence that pain can be produced by internal stimulation of the brain direct, as well as by stimulation of the body. In either case the brain plays a part. Can pain be produced or prevented by what can be termed mental processes in which the body is apparently not playing a part?

It is by no means uncommon to find pain persisting in a part of the body that suffered injury *after* the previous physical signs that led the doctor to expect pain, have disappeared. The pain was entirely genuine initially when that part of the body was first hurt. It then becomes so much a part of the patient's life that he continues to attribute it to himself when the physical causes have gone. The pain is genuine in that he is *feeling* it and is *convinced* there is a reason for it. In one case such a pain finally disappeared only after a doctor had convinced the patient that there was no need for an operation and that if he went on leading a normal life the pain would go. In another case the pain went after the surgeon 'operated', but in fact the operation consisted only of opening the 'affected' part of the body for inspection and immediately closing it up again.

Such instances are not unlike the 'phantom limb' phenomenon. In this a patient who has had a limb amputated continues to 'feel' it and has a sensation of the actual part that has been taken from him. So used has he been to possessing the limb, that he cannot 'get it out of his mind' and it is as if his brain were telling him that the limb was still there. On the other hand just as our mind can convince us of a physical sensation or a pain that is without physical symptoms, so can mind remove a pain that 'ought', physically, still to be present. For example, severe pain can be removed by means of pain killing drugs, such as morphine which work on the mind and nervous system. It has also been found that intense pain can be alleviated by the injection of a purely neutral substance which the patient *thinks* is a pain killing drug. The patient believes that he is going to have less pain after the injection and he does have less pain, though no chemical changes have taken place.

It is also a fact that distraction can reduce pain considerably. The dentist's conversation, a tight grip on the arm of the chair; continu-

ing to play on in a game after injury, deep concentration on some other topic—with such distractions pain is felt as less severe. Then there are the mystics who lie on beds of nails or walk barefoot over glass, who undergo self-hypnosis and drive needles through their flesh without a drop of blood being apparent—such triumphs of 'mind over matter' are factually recorded, even if they are not common. Such examples show that it is often not the situation itself but the way the person views it that leads to it being painful or not.

An expectation of pain leads to an increase in tension and when tension is increased other chemical and neurological changes take place which result in pain being felt. Distracting the attention leads to a lessening of tension and thus to a lessening of pain. Relaxation is said to be able to lead to painless childbirth; what is relaxation but

easing of tension? If relaxation is indeed complete enough (and it requires long training to enable it to be complete) much pain of physical origin may be minimized or eliminated for the period of such relaxation.

CHAPTER 10

OUTWARD AGGRESSION AND INSECURITY

Aggression in animals in their natural state is normally confined to situations in which members of one species depend on members of another for their food supply. Cats kill mice, many birds kill worms, lions kill antelopes, a hawk kills a partridge. Only in captivity and in a confined space will a roebuck gore a fellow buck to death—and that is determined by the need for survival. Curiously it is those animals that depend for their existence on flight rather than fight which most frequently perpetrate the worst outrages on their fellows when one of the latter is cornered and cannot escape. As an example of those animals that fight—the wolf, normally noted for its aggression, will restrain itself from killing its cornered fellow and will offer its throat to its adversary—the cornered wolf—for a would-be death kill. There is a simile here with the tenets of Christianity and other religions. The animal which submits escapes with its life. The animal that retaliates brings out more aggression from its opponent. Hares and deer are normally timid animals which rely on 'flight' rather than 'fight' with the result that in their natural state one that is attacked will most likely be able to escape. If escape is impossible animals of both these species show more ferocity to one another than would wolves or ravens, natural predators of other species, whose need to perpetuate their own species enables them to stop short of killing one of their own kind even when the opportunity is offered.

Man's ability to use tools has enabled him to procure food and other necessities of life with a minimum of physical effort compared with that needed by other animals. He has reserves of energy left which he can turn either to constructive account in peaceful co-operative enterprises with his fellows or he can use destructively in fighting against members of his own species. His problem is to find a way of channelling his natural aggression for constructive use. The

more civilized man has become, the less he has needed to use aggressive instincts to hunt and obtain the necessities of life for his family. Instead he is apt to band together with a number of his own species against another similar group; hence the world has seen tribal war and international war and is now threatened by the possibility of intercontinental war. Unless he can learn to channel his aggression peacefully, man may well destroy himself completely. To save himself from himself he has one tool denied to the animals, the tool of verbal communication which enables him to share his feelings and express his doubts and anxieties. He has had this tool for centuries, but he has yet to learn to use it perfectly. It is because he is still learning how to communicate and confer with his fellows that strife arises not only between nations but between and within families.

The infant (and we should remind ourselves that the word 'infant' means 'not speaking') shows far more overt aggression at the emotional, personal level than does the normal adult. The temper tantrum of the two-year-old, in which he fights and screams with real fury in his heart, would lead him to inflict physical hurt on his parents had he strength commensurate with his feeling. His aggression is often due to frustration and the frustration is aggravated by his inability to understand why curbs should be put upon his activity. In the interests of his personal safety he has to be prevented from putting poisonous berries into his mouth, or running into the street, or playing with the electric fire. Because he cannot fully understand the explanations which his parents offer to justify their interfering with his wishes, he feels frustrated and gives way to the temper tantrum. As he grows older and learns first to understand what is said to him and then to express his own thoughts in words, his tendency to show temper becomes less frequent.

Aggression in the small child can also be due to a feeling of insecurity. The birth of a second child can evoke jealousy as well as love in the first born who may feel that the new arrival is occupying a place hitherto exclusively his own. The elder child has to learn to cope with his feelings of jealousy, while in time the younger has to face up to his own envy of an older brother or sister who is so much better at work and games than he is. Each will at times show aggressive feelings in this rivalrous situation and may resort to

kicking or biting or pummelling. Gradually they both begin to accept the situation and come to realize that parents' affections can be equally spread. As their sense of security grows they become less aggressive with one another.

Upbringing plays a large part in determining whether aggressive tendencies remain or are channelled into peaceful pursuits. Anthropologists who study primitive tribes find that where parents are friendly and generous their children will usually take on the same characteristics, but where parents are harsh and intolerant the children behave likewise when they grow up. Children who are treated aggressively by their parents tend to be aggressive towards other children or towards their toys. They are afraid to retaliate against the person who punishes them, but will act aggressively towards either smaller children, who are themselves afraid to fight back, or towards animals or toys. The child who bullies is often one who has himself been harshly treated. Aggressive treatment leads to more aggressive treatment.

Frustration often seems to be a cause of aggression. A group of psychologists at Yale University put forward this hypothesis some thirty years ago and found experimental evidence to support it. It is possible that even wars may be in part caused by one nation feeling frustrated in its attempts to solve its economic and social problems in a peaceful way. Like the subjects in an experiment, a nation can find a peaceful way round its frustration by accepting that its people will be poorer than those in other countries, but if it feels powerful enough it may resort to aggression.

Jealousy is another possible cause of aggression. Studies of children have found that the arrival of a new baby may cause the elder child to feel it is being deprived of parental affection and thus to behave aggressively towards the new baby who seems to be responsible for stealing the affection. Jealousy, especially if it is linked with a sense of insecurity, can be a cause of aggression towards another individual and between nations it can be a cause of war.

Jealousy seems to have been a principal cause of the Peloponnesian War between Athens and the cities of the Peloponnese led by Sparta in the fifth century B.C., no less than the wars between Rome and Carthage in the third century B.C. Had Hitler felt more secure

about his own position within Germany in the 1930's, he might not have felt it necessary to turn hostility away from himself by ensuring that his nation's aggressive feelings would be directed outside the country against other nations. The danger of any political leader or group having absolute power is that he (or they) may resort to war for this very purpose, to unite the country behind them at the moment of their own internal crisis. The dictator who has sufficient military power can cause aggression to be directed or displaced from himself.

At times it is inappropriate to retaliate directly against the person who causes one to be angry. In such circumstances aggression is liable to be displaced on to another target. If the boss makes his secretary angry, she may feel it unwise to answer him back. Instead she may relieve her feelings by banging more forceably on the typewriter or by being short-tempered with the office boy. A wife can sometimes sense that her husband has had a bad day at work if he is easily angered by the children's antics, or if he bangs the garage doors shut, or digs furiously in the garden. Experimental studies have found evidence that aggression can be displaced in this way, particularly if the subjects are already prejudiced. One experimenter found that a group of highly anti-semitic college girls whom he made angry and frustrated tended to show more hostility than they had shown previously towards another student who played the part of 'innocent victim'. It seems that a prejudiced person is unable to tolerate his frustration and is ready to find a scapegoat.

Those who feel themselves to be intellectually inferior may show their aggression by mocking their bookish contemporaries and disdaining activities which they think require an intellectual approach. Tragic plays and operas can be appreciated by the masses, not just the intelligentsia, because they make this point. It is clear from the popularity of the tragedies written in Athens in the fifth century B.C., no less than those written in Shakespeare's England or Renaissance Italy, that the problem inherent in any competitive society is that some will begin to feel themselves inferior and will show their envy and hostility by avoiding and spurning what in time they might have grown to enjoy.

In personal relationships aggression is sometimes displayed cov-

ertly rather than overtly. The following serves as an example, drawn from observation rather than from experimental evidence since such a situation cannot be subject to experimental control. A shy, timid man who marries a dominant woman may, with a part of himself, begin to resent her dominance. He is afraid to oppose her openly, so he withdraws into himself. He becomes moody and morose. If she is a demon for punctuality, he will show his aggression by seeming to lose all sense of time and will spend hours on what she feels could be achieved in minutes. If she is ready for him with a list of household jobs to be done, he will always be detained at the office, or feel too tired, or find his own jobs to do. He may not counter by being actively aggressive, but his hostility can still show itself by his prevarication, lack of concern, punctiliousness or, alternately, lack of punctuality. Indirectly rather than directly, unconsciously, rather than consciously, he may do or alternately not do things in order to get his own back, in order to show that part of his nature does not want to be dominated. Yet, because with the other part of his nature he does want to be dominated, he is afraid to acknowledge his aggressive feelings and is unable to communicate them to his partner, even in words. His actions of retaliation do not seem to be aggressive because his hostility is veiled. Therapy or counselling is needed in order for him and his wife to understand the reasons why they behave as they do. When they understand, their problem has some chance of being resolved.

Aggression has been studied by social psychologists in a laboratory setting, under controlled conditions. In one such experiment subjects were put into situations in which they were deliberately insulted so as to provoke aggression from them. Then half the group was given the opportunity to display their aggression on paper by expressing their feelings in writing. Given the chance to release their feelings, they were later found to show less resentment than the other half of the group who were not allowed an opportunity for such expression.

The results found in the experiment suggest that there is a relationship between people's ability and opportunity to verbalize and the lack of display of physical aggression. It is quite possible that people who aggress outwardly by damaging other people or property are often those who are unable to express themselves with any degree

of fluency either in writing or in speech. We also find that if an individual who is likely to use physical violence is given appropriate psychiatric treatment he will probably improve in the arts of discussion and conversation and subsequently find that he begins to express his feelings in words rather than in action. He finds he can talk about things, whereas before he kept quiet, but acted violently.

The person who lacks the confidence to express his feelings, senses himself to be hemmed in. He is controlled by the person or thing that he fears and cannot master. Because he cannot be free, he cannot be truly independent. His frustration is as strong in its way as that of the child who throws a temper tantrum. The adult does not usually throw a temper tantrum; instead he internalizes by shutting up his feelings within himself and holding them there until he suffers a breakdown in health and his anxiety shows itself in physical symptoms; until he can hold back no longer and commits an act of physical violence apparently out of character; until he finds a counsellor in whom he feels confident and to whom he can begin to talk.

A man is perhaps more inclined to fear his own potential aggression than a woman. It is more often men who internalize their aggression and become morose. A man is afraid of the strength he possesses, his more dominant sexuality, his stronger muscles. Often the shy retiring man marries a dominant woman, who finds herself in conflict because, while she likes being the dominant partner, she also feels he should play a more dominant part than he does. She wants him to be more the man and yet because of her very insistence that he should be, she smothers him and drives him unwittingly further and further into submission. He is bewildered, and fearing his dormant masculinity retreats from her in confusion. He knows he ought to be 'more the man' and yet he cannot be. His aggression is internalized and he may suffer a breakdown in health.

Woman on the other hand is expected to be submissive, thus she has no reason to fear her own dominance will get out of hand. She can more easily relax and wait because this is her expected role. She may experience contrasting periods of depression and elation if she is inclined to be neurotic, but she will be less likely to withdraw completely and drive her feelings within herself than will the average

man. Because she is expected to be more dependent than man, so will she have less consciousness that she ought to be independent. She will suffer less frustration, because the contrast between what she is and what she ought to be is less marked.

In the animal world the fittest of the species are the ones that survive. Weaklings are attacked by the rest and often even among the more robust members, a definite hierarchy is established. The herd has its leader. Hens have a ranking order. Competition is ruthless. Each lives for itself or for the family—self survival and species survival being all important. With man himself it seems likely we can be certain that the more civilized he is the less physically tough he is, because in primitive society it is the strongest who survive. Even when brains gradually assert themselves over brawn, illness is more likely to overtake the physically weaker rather than the strong. Natural selection is still at work although to a lesser extent than among the animals. With the modern advance of medicine and the physician's skill in saving life, many survive who would otherwise have died young. Man values brain rather than brawn and correctly feels that the physically handicapped can contribute usefully to society and that they have a right to survive and enjoy their life.

The mentally handicapped are also saved because of the compassion and feeling that man alone can show. Because we do save life at all costs it is difficult to suppose that the more civilized a race is, the less it will need physicians to support the weak. A greater responsibility for the underprivileged is inevitably one of the prices that has to be paid for improving our knowledge of how to survive. Yet none but the callous would have it otherwise. To revert to the infanticide that the Spartans practised when they exposed infants to the elements to test out their toughness, would simply be doing in cold blood what animals do instinctively.

The aggressive instinct is useful, because properly channelled it is this which helps man to be adventurous, to show courage in battle or in dangerous natural conditions. It can also be channelled into the use of words rather than actions. Politicians use this form of self-expression, as do advocates and soap-box orators. Poets and writers in general use the written word to release their feelings; quite often their feelings are aggressive. But there are times when the adult

is stumped for words—he cannot for one reason or another express his thoughts coherently—cannot talk over his problem. Something, possibly quite small, annoys him and he may revert to the equivalent of childish behaviour—shouting and fighting. Alternately, he may bang doors or drive his car recklessly. Men have beaten their wives, women scratched their husband's faces—aggression can reach a pitch of physical violence because understanding and judgment are clouded, thoughts are jumbled, and words, except abusive ones, will not come. To counter aggression of this sort with anger, vindictiveness, or superior disdain will only cause it to grow.

People who are apt to be aggressive when they are adults, can be helped once they have cooled down and are able to take stock of themselves. A person is aggressive when he is insecure. The new baby in the family is greeted as a rival and whatever the parents' reassurances, from time to time the elder sibling will want the younger one out of the way. He will show aggression. He is feeling insecure. The jealous husband or wife is in much the same situation. He or she feels rivalry, whether justifiably or not, and is thus insecure. The noisy or over-fast driver has a need to assert himself by being louder or faster than others on the road. Why? Because he is insecure in the relationship with other road users—they may get there before him by better use of their brains, so he must assert himself physically. Or he may feel insecure for office or home reasons and is—stupidly and dangerously—using the power of a machine to try to impress others. The dictator who makes war, and the ruthless N.C.O. who aims to make his men afraid of him—all such people show an inner insecurity which is covered by an outward show of aggression.

All people are liable to act aggressively at times. Any act of selfishness is in a sense an act of aggression, and no one can claim he is never selfish. Most people manage to contain their aggression because they are basically secure. There are enough potatoes to go round, so people in a restaurant or at home do not fight for first possession of the dish; because the shops are well-stocked, people remain in their places in the queue. But if there is a shortage at any time, who does not tend to resort to trickery to obtain what he wants, whatever may happen to others in the process? There is little doubt that when men are deprived of their necessities, their pattern

of behaviour becomes more similar to that of the animals. Fear drives each man to think of himself rather than of his neighbour, unless he is imbued with standards or principles which cause him to put the needs of others before his own. There is of course evidence of such altruism every day: we read of the efforts of mountain rescuers, firemen, lifeboatmen and doctors and nurses who expose themselves to infection and danger in helping the physically and mentally ill. Any disregard of personal interests shows man at his best, at his most dignified, lacking selfishness, lacking aggression.

CHAPTER 11

ACCIDENTS, ILLNESS AND MALADJUSTMENT

ACCIDENTS

'The real cause of an accident when, for instance, a car overtakes dangerously and is sandwiched between two other vehicles (in other words, cuts in) may not be lack of skill so much as the row a man has just had with his wife or a Building Society's refusal to let him have a mortgage'. This quotation is from the *Daily Telegraph Magazine*, 28 July 1967; it shows that research into the causes of accidents suggests that a driver's emotional state may be as likely to be the cause of his having an accident as his lack of ability. There is evidence that human behaviour is a more serious factor as a cause of accidents than either the condition of roads or of vehicles. For that reason the personality characteristics of those who have accidents are the concern of the research scientist. The question that has to be asked is 'What sort of people allow their frustration to display itself in openly aggressive behaviour?'

In *Fact and Fiction in Psychology*, H. J. Eysenck has shown that people who have road accidents tend to have particular personality characteristics: carelessness, aggressiveness, impatience of authority, emotionality, distractibility, impulsiveness, lack of caution, variability, liability to be influenced by the mood of the moment—traits that are found in the person of choleric temperament, traits that characterize the extravert rather than the introvert. These extraverted characteristics are also commonly found among those who have accidents in industry. They are also found more commonly in men than in women. The age factor is also related to the personality factor as a cause of accidents. Deaths from road accidents reach their peak at about the age of eighteen, and remain high until the early thirties. As people become older, they tend to become more introverted. The extraverted characteristics listed above are more typical of eighteen-year-olds in general than, for example, those twenty years older.

Alcohol ingested above a certain amount is considered to be a cause of accidents. Eysenck states that alcohol affects introverts differently from extraverts. The introvert is likely to be more tolerant of alcohol, as he is likely to be of other extraverting drugs; he is not likely to be as affected by alcohol as is the extravert. There is evidence that the extravert tends to drink more alcohol than the introvert. The more alcohol he has, the more extraverted he becomes as he 'gains' in self-confidence. His sense of judgment will not be equal to his self-confidence.

Professor Cohen at Manchester University has demonstrated that the consumption of alcohol increases self-confidence but seriously impairs judgment. The subjects in his experiment were bus drivers and for the purposes of the experiment they were given varying amounts of alcohol. They were then asked whether they thought they could drive a bus between two sticks which had been driven in to the ground rather less than eight feet apart. They then had to carry out the manoeuvre. Since the bus was eight feet wide, the task was impossible! The experiment showed that the more alcohol they had consumed the more confident they were that they could carry out the task! Drivers who maintain that they drive better when they are under influence of a limited amount of alcohol may well be genuinely convinced that this is true, but the experiment above indicates that such confidence is founded on belief rather than reality.

A discussion with a group of eighteen-year-old drivers revealed considerable differences in thought processes while driving. One of the group said that he slowed down on entering a built-up area because he visualized the possibility of children running into the road in front of his car. Another said that such a thought never entered his head and that the only reason why he ever slowed down was because of the actual presence of another vehicle or pedestrian in his path. The former demonstrated an introvert viewpoint, the latter an extravert viewpoint. The introvert was influenced by the *thought* that an accident might occur. The extravert was concerned only with what was *happening*. He did not visualize the possibility of being involved in an accident. Those who drive too fast, for example, in foggy conditions show the same characteristics. Such lack of fore-

sight may be due either to an unwillingness or an inability to visualize disaster until it actually occurs.

Studies of accidents in industry reveal that some people are more accident-prone than others. One study showed that 80% of the accidents happened to only 20% of the workers. In another study it was found that 80% of those who had had one accident tended to have others, and that those who have accidents have particular personality characteristics. They tend to be quick-witted, impulsive, and resentful of authority, similar in fact to those quoted by Eysenck as being most liable to have road accidents. Accident-prone individuals tend to go on having accidents even when circumstances are altered to try to prevent them. One company shifted those workers whose accident records were bad to safer work. Instead of having accidents at work, the workers had accidents at home.

Since there seems to be a connection between accident-proneness and personality, positive action is required to help the accident-prone. Personality tests could be given to all drivers, and those whose personality characteristics showed extreme extraversion could be given more intensive training before being allowed to drive on their own. Alternatively, when anyone is involved in an accident, he could be given a personality test; if he were judged likely to be accident-prone he could be given special training. This could take the form of compulsory attendance to discuss the causes of accidents, the attitudes of drivers, and their differing personality characteristics. As people grow older they tend to become outwardly less aggressive and less impulsive. This continuing process could possibly be accelerated by training and by education about the causes and results of accidents. Thus more lives might be saved.

Putting a prisoner in a detention centre without training him or educating him will do little to reform him. Imprisoning or fining a driver does not guarantee that he will driver better after his punishment. The accident-prone are to some extent victims of their own personalities and these personalities are partly the result of inheritance and partly of the environment. The responsibility for effecting change lies not only with the individuals themselves but with society. The lesson to be learnt from the study of accidents is that however much roads are improved and vehicles made safer, the

human factor will continue to cause accidents unless personalities and attitudes can also be treated.

ILLNESS

It has been demonstrated in a psychological laboratory that it is possible to cause a physical illness in a monkey by subjecting it to treatment which puts it into a state of emotional conflict. The monkey in question developed a stomach ulcer. The stomach ulcers which afflict humans are brought on, not by a controlled experiment, as in the case of the monkey, but by the stressful experiences of life. Stomach ulcers, like some heart diseases, like some types of asthma, like some forms of arthritis, are known as psychosomatic (mind/body) illnesses. There is a physical weakness in the body which predisposes the patient to be liable to develop the illness, but emotional stress rather than physical stress determines the actual onset. Were it not for the emotional stress the illness might never have developed.

Sometimes psychosomatic illnesses respond to treatment by physical means. Sometimes such treatment is unsuccessful. One doctor who was responsible for the care of patients with rheumatoid-arthritis found that their arthritic condition improved only after he was able to win their confidence and they were able to talk to him freely and easily about their personal problems. He found in each case that immediately before the start of the illness the patients had suffered a period of emotional upset during which they showed resentment. Discussion enabled the patients to express not only their resentment but also their guilt feelings about having such resentment. Treatment of the patients by physical methods had failed. Their physical condition improved considerably when they were able to release their feelings in discussion and—as the doctor himself reported because he felt it contributed towards the improvement—when they were able to find a personal experience of God.

Progress in the use of properly prescribed drugs has been very considerable this century. Many previously incurable illnesses can now be cured by drugs and research workers continue to find new cures. Yet when symptoms are not cured by drugs it may sometimes be because underlying emotional tensions are preventing the return

to good health. If the emotional tensions can be resolved the physical symptoms may disappear or at least get no worse.

In the first century A.D., when the Gospels were written, it was recognized that mind and emotions play an important part in physical illness. Jesus is reported as emphasizing the importance of faith when people came to him hoping to be cured; he seemed to be referring to mental attitude when he said to a man whom he had recently cured, 'Go and sin no more'. Today religious organizations such as the 'Guild of Health' bring together Christian doctors, nurses, clergy and lay people to work for better health both for individuals and for the community. Such workers emphasize the interrelation of body and mind. Before the whole person can be free from what they often call 'dis-ease' (rather than disease), the mind must be at ease. Before the mind can be at ease, the body must be relaxed. Relaxing the body is a conscious, active process during which one lets all tenseness and tightness leave the muscles, first of the head and face, then of the rest of the body. When the body is relaxed ideas and thoughts come to the surface of the mind from where they can be expressed in words; sometimes the thoughts will be ones that a person is unwilling initially to release. Stress is often caused by having secret fears or feelings of guilt or resentment.

When a man's relationships with other people are happy, when his work and hobbies give him pleasure, his health is more likely to remain good than when there is a breakdown in personal relationships or he finds his work dull.

MALADJUSTMENT AND TREATMENT

When a child's behaviour is very anti-social and his emotional reactions show that his whole personality is disturbed, he is described as maladjusted. The term 'maladjustment' is used because such youngsters have adjusted badly to their environments, not due to any fault of their own. Circumstances have conspired against them and they can best be helped to adjust by being educated in a school with small classes under teachers who have been specially trained; sometimes such a school is residential and when the home cannot provide

a good environment it is desirable that the school should be residential.

Maladjustment shows itself in one of two ways. It can be seen in behaviour that is unusual at the particular age in question. For instance it is quite normal for two-year-olds to have temper tantrums. An eight-year-old who consistently has these has clearly not grown up as a child normally does and in order to do so he may need special care. In the same way, very young children cry, soil their nappies, break their toys, turn out the contents of cupboards and take things that are not their own. If such behaviour is prolonged well beyond the normal stage, remedial, therapeutic treatment must be given. Excessive anger, violence, acute misery, stealing, lying, are some of the symptoms of the failure to adjust to the demands of society. Normal children often exhibit one or more of these symptoms between the ages of eighteen months and five years, but beyond that age they have usually 'worked through them' and have come to accept the limitations that society needs to impose on their behaviour; they have come to terms with the environment. Some children exhibit tendencies to tell lies well beyond the age of five, but unless such a practice becomes habitual and to tell the truth is the exception rather than the rule, one would not call them maladjusted, any more than one would call an adult mentally sick who had periodic fits of depression or anxiety. Adjustment is difficult for all of us and from time to time we slip back and exhibit childish, immature behaviour. The problem becomes one that needs treatment when such behaviour is becoming the habit; when it is the usual rather than the exceptional.

The second way in which maladjustment can show itself is when a child is too well adjusted to his own particular environment, however much he is 'maladjusted' in the eyes of society as a whole. There are, regrettably, some social areas such as housing estates where violence, stealing, and a general anti-authoritarian attitude are the norm. A child reared in such conditions conforms to local patterns of behaviour. He is conditioned to accept anti-social acts, violence and dishonesty in all its forms, as the 'right' characteristics to adopt. He sees no wrong in violence and dishonesty. Such abnormalities are a part of his everyday life. He accepts them as 'normal'. If such a child

is finally disciplined by society and sent to a school to be trained, he may take with him all the hatred of authority that he has learnt. It is an almost impossible task for those in authority to change the attitudes that have been forming and hardening over years. To undo the work of the past is always difficult. Characteristics take root in the early years of life.

What has been said so far indicates how maladjustment may occur. We shall now consider what can be done about children who are maladjusted.

First, they must be offered a secure atmosphere where they can learn easily what is expected of them and discover what is and what is not tolerated. Then they must be given the chance to form relationships with people who are understanding and sympathetic. The normal child has relationship with his parents—shares interests with them, talks to them, perhaps at times exasperates them and is punished, but he is still loved by them. The child who has been rejected, whose parents are not interested in him, does not form a good relationship. He will need a lot of care from those who are in charge of him before he gains confidence and is willing to share his thoughts and feelings. His teachers or house parents have to try to fill the role of natural parents. The child is welcomed as one of a family rather than as a member of an institution. As he becomes more at peace with himself and his environment, so his I.Q. result and his academic standard will improve.

Many schools for maladjusted children allow a free atmosphere in which their charges are not punished for being critical or rude, but will rather be encouraged to express their feelings, by talking freely. Feelings become bottled up and the violence or dishonesty that is a symptom of the maladjustment is often due to the repression of feelings. To be allowed free verbal expression will enable feelings to come out; it is an essential part of the curative process. So the child who says to his teacher or house-parent 'I hate you' will not be formally punished; the remark will not provoke an aggressive response from the adult, but rather 'Tell me why' or 'So you do then, I wonder why!' If a further outburst is forthcoming this will be accepted, because once again feelings are being released and the discerning adult knows that 'I hate you' is not really a personal

remark but epitomizes the child's feelings about the world. It is the equivalent of 'I hate what you stand for', that is, 'the adult world which I cannot understand'.

So the teacher of emotionally disturbed children is one who can take whatever comes, who tries to understand every action, every remark, and will gradually channel actions and words into a more acceptable pattern as the child is able to come out of himself and find the world about him less hostile. Such a teacher has no high horse, no false dignity to stand on; he does not surround himself with rules and an aura of authority. He knows that progress will be slow but that in the end he will reap some rewards from his patient, understanding approach.

CHAPTER 12

ARE PLEASURES WHAT THEY SEEM?

No meal brings us as much pleasure as the one following a period when we have been deprived of food longer than usual. We enjoy food most when we are hungry; we enjoy drink most when we are thirsty. A man who is unable to get water for many hours is in pain. The glass of water which relieves his pain brings him pleasure. Such pleasure is physical.

We live in a society where the sources of physical pleasures are easily provided. Because food and water, warmth and comfort, are readily available we take them for granted; we scarcely think of them as things that bring pleasure. Rarely do we have to do without them for long enough to appreciate them fully.

Civilized man, unlike primitive man or the animals, can obtain the essentials for life easily. It is possibly for this reason that he has created for himself habits in which he experiences pleasure through the relief of pain. The person who says that he is 'dying' for a cigarette is in a state of pain. The pain is psychological rather than physical. The heroin addict who requires his 'fix' is in a state of acute *physical* pain. The longer he is deprived, the worse the pain *in his body* becomes. The pleasure he receives from his 'fix' is no more than the relief of pain.

When, for example, a person starts to smoke cigarettes he usually is copying another person or persons who appear to enjoy the habit. He smokes initially for the experience, to see what it is like. If he persists in smoking, in time he may become dependent on the need to smoke. His life may become 'intolerable' without smoking. He has thus created for himself a condition of deprivation which is painful; relief of the deprivation is pleasure. It is unfortunately possible to become so dependent on alcohol that alcohol becomes a necessity. Alcohol has chemical effects on the blood; thus the alcoholic, like

the heroin addict, experiences physical pain when he is unable to obtain the alcohol that his body has come to need. Drugs such as marijuana and L.S.D. (which are not in fact chemically addictive) cause such intense changes of feeling that the person who takes them can become psychologically dependent on them. In all such habits people create for themselves conditions of deprivation in which pleasure is in the relief of pain.

There is a difference between becoming so dependent on smoking that life is unbearable without tobacco or cigarettes and enjoying smoking in the same way that most people enjoy alcohol. The majority of people can go for days without alcohol. They enjoy it when they have it, but it is no hardship to abstain. It is possible to enjoy smoking in the same way (as one enjoys eating and drinking), for the taste and other sensations which accompany the activity.

The adolescent who allows himself to be persuaded to take drugs has probably already smoked and also tasted alcohol. He has either found them less pleasurable than he imagined they would be, and so wants to try something else, or he is given to understand that taking the drug will produce a pleasurable effect at least as great if not greater than the pleasure experienced from tobacco or alcohol. He may also be influenced by the fact that because drug taking is illegal he feels there is pleasure to be gained by breaking the law.

Drugs are manufactured because of their therapeutic value to people who are ill. Drugs whose effects are likely to be strong are only legally obtained by doctor's prescription, whereas those such as aspirin which are innocuous provided they are taken according to instructions may be obtained without a prescription. The reason why drugs of the amphetamine group are only obtainable legally on prescription is because they can easily damage health if taken improperly. Though originally introduced to combat depression, amphetamines have now been largely superceded in the medical profession by the more recently produced tranquilizer and anti-depressant drugs. A doctor who prescribes amphetamines will always have to watch for side-effects. Amphetamines suppress the appetite, stimulate the brain, and thus cause over activity and prevent sleep. Since nature prescribes food and sleep, taking a drug over a period of time which removes the desire for these is, to say the least, tampering

with the natural order of things. Not only may it create an imbalance in body chemistry; it may in time cause brain damage, particularly if the drug finds its way into the blood stream. There is always the possibility that people who take such drugs will become dependent on them. It would be wrong for such drugs to be obtainable on the open market.

The drug cannabis, which has no known medical uses, is illegal because it distorts judgment and perceptions. In this respect it is similar to L.S.D. which distorts perception so much that a person may think it safe to do the impossible such as walking out of a high window. The sense of well-being induced by cannabis eventually leads to idleness and a wish to opt out of society. The drug pusher often finds it advantageous to use cannabis on his 'victims' because cannabis induces the feeling that it is safe to experiment with stronger drugs such as heroin.

The particular danger about heroin is that it is chemically addictive. An injection produces initially a feeling of pleasure, but gradually the body begins to demand more and more of the drug. Unless the demand is satisfied the victim experiences considerable physical agony, in a similar way to the alcoholic. He will resort to any means to get his 'fix' and he loses all respect for the truth and for normal values.

Drugs are taken purely for the effect that they will produce. There is nothing pleasurable about the actual act of taking them. In this respect they are not to be compared with either tobacco or alcohol both of which are usually enjoyed for their own sake, irrespective of any effect which may result.

Children are able to enjoy life without having to create such needs as we have discussed. They enjoy life by enjoying activity. They enjoy the activities of primitive man, climbing trees, building hide-outs, throwing, wrestling with one another as young animals do; they enjoy also the activities of civilized man, reading, building, painting, and playing games. By about the age of eleven they are as tough, as independent, and as unself-conscious, for their age, as they are ever likely to be. The pleasure that accompanies the activities of children is spontaneous; it belongs to the activity itself, it is intrinsic. Among adults, hobbies and even work can bring a similar pleasure. The man

who is happy in his work or his hobby does not stop to question whether he is enjoying it. He is too much absorbed in it to wish to query his own feelings. He loses his self-consciousness in his activity, much as a child does in his play. The total involvement of the golfer as he addresses his ball for a vital putt, of the surgeon as he delicately uses his surgical instruments, of the engineer as he measures to a thousandth of an inch (tasks involving care, attention, skill and total concentration) illustrates a kind of communion—the man and his work are a unity.

It is possibly because man has learnt to control his sexual drive and because he has the satisfaction of other creative pursuits that he has been able to rise above the apes. In their natural state apes are promiscuous; as earliest man was very similar in behaviour to apes, it was undoubtedly a long time before the practice of monogamy became established. Today there are primitive races which permit sexual freedom among their youngsters; there are Eastern races which permit polygamy or allow their menfolk to have concubines. These races which allow greater sexual freedom than is common in Western Society are not among those which have led the way in scientific or artistic achievements. Control or harnessing of sexual energy seems necessary if men and women are to fulfil their creative potential in cultural and social activities.

Young people constantly ask the question, 'How much control over sexual activity should be exercised?' For example, 'Should sexual intercourse only take place within marriage?' Such questions are not easy to answer—other than in general terms—because when related to individuals they must inevitably throw up further questions such as 'What are people aiming for in life?' or 'How is morality related to marriage if two people are in love but have not yet married?' Most people accept that one of their main aims in life is to enjoy a happy married life, to have children, and to provide their children with a good start in life. A happy family relationship requires that husband and wife have faith and trust in one another. Sexual intercourse differs from other natural physical pleasures (such as eating and drinking) because it involves two people and may, through the creation of a new life, involve a third. It cannot therefore be regarded as we might regard food or drink.

Often it is pressure from outside rather than awareness of his or her own sexual development that prompts a young man or a young woman to experience a sexual relationship. If a boy hears others talking about their own sexual prowess he may feel he wants to imitate their behaviour in order to prove his own masculinity. If a girl is told by her boy friend that he has had sexual relationship with other girls she may be persuaded to be permissive in order not to appear different from others. If a young man becomes friendly with a woman who tells him she is sexually experienced he may feel he is not paying her the attention she expects unless he has intercourse. If a young woman becomes worried by the fact that her friends are married and she herself is not, she may feel that the only way she can obtain a husband herself is to be permissive sexually. It does not mean that she is promiscuous although the one can lead into the other. In all such situations one of the partners may be acting insincerely, out of a wish not to be different from other people rather than from a wish to enjoy a sexual relationship spontaneously, as part of a loving relationship.

Marriage ensures legal rights. The ceremonies, the church service, if there is one, and the wedding reception help to give status and importance to the marriage. Important occasions, both among primitive peoples and civilized peoples are attended by ceremony. Both the wedding itself and the legal rights that accompany marriage usually mean more to the woman than to the man, for she has more to lose if the relationship is not legalized. It is usually easier for a man to desert one woman and find another than it is for a woman to find another partner if she is deserted. Though trial marriages, which some advocate as a way of testing whether two people are compatible, may resolve some psychological tensions they may also create others. On the one hand they serve to release the emotional tensions which accompany a long period of engagement. On the other hand the 'trial' state may continue to suit one partner long after the other has begun to wish for a permanent relationship.

Where there is mutual satisfaction, where there is consideration, where there is 'give and take', there is understanding in all aspects of life. There can be love in the act of intercourse; but the love that is intrinsic to the full enjoyment of a lasting sexual relationship is part of the greater love that embraces much more than sex. Love means

support and encouragement of the loved one and a degree of self sacrifice on one's own part. Love can develop between people of similar ages without sexual relationships developing, whether such friendships be between two boys, two girls, or between boy and girl.

Care, concern, sympathy, interest, these are the characteristics of love. It is a psychological need. In the loving relationship there is confidence and understanding, faith as well as hope. Love is recognizable but in the last resort it cannot be analysed.

Marriage is only a beginning. The couple are 'in love'. Being together is joy, being apart is painful. They have sufficient mutual interests to be able to exchange opinions and share ideas. They are ready to face difficulties and problems together and gain strength from one another. Such a readiness provides a basis for a happy marriage. The outcome of a marriage depends not on the temptations and difficulties that arise (because such will inevitably arise) but on whether the couple has enough faith and trust in one another to face their problems and overcome them.

All couples, however well suited, require time to adjust to one another, if not physically, then emotionally and temperamentally. It is sometimes said that incompatibility is the main cause of marriages breaking up. But few couples are compatible in every respect. Even in the best marriages there will be times when one partner annoys the other, just as on every committee or social group there will be times when members annoy one another. A couple may be compatible sexually in that both achieve complete satisfaction in their love-making. Such compatibility will not last if they become impatient of one another in other respects. On the other hand a couple who are genuinely fond of one another, but whose sexual relationship is not initially mutually satisfying will in time adjust to one another given patience and understanding. Marriage affords the opportunity for human beings to fulfil each other. In order to grow together in that way a couple must be able to communicate. It is not only words that enable two people to communicate, to share their ideas, to understand one another. Rather, it is the thoughts behind the words, the feeling that the words convey. Two people who are in love find the hours they are apart hard to bear. Two people who love one another accept that life necessitates them being apart some of the time but have no fear that their faith and trust in one another is misplaced.

CHAPTER 13

UNCONSCIOUS PROCESSES

All of us are familiar with slips of the tongue. In everyday life we accept them, laugh about them, and do not attribute any great significance to them. Freud, however, considered them of more than passing interest and in *The Psychopathology of Everyday Life* he gives a number of examples where slips of the tongue are unconsciously motivated. He quotes from *The Merchant of Venice*, where Portia exclaims to Bassanio, 'One half of me is yours, the other half yours', but then corrects herself by saying, 'Mine own I would say, but if mine, then yours'. Freud suggests that in her slip of the tongue she has shown her real thoughts—that she is saying she considers herself to be more in love with Bassanio than he with her.

The patient who said to Freud, 'I'll *play* right away' instead of 'pay' showed his real wishes, to play with his doctor, to 'string him along'. The unconscious wish came out in error, but in a sense 'play' was the right word because it indicated his true intentions. In another case mentioned by Freud a man at a party had not received the meal he had been expecting and, discussing the merits of a candidate in an election, said, 'He'll always give you a square meal'. The hungry man brought out the word that was of personal significance at the time, rather than the words 'square deal'.

Freud also refers to several instances where unconscious wishes cause forgetfulness. A man had become estranged from his wife. Shortly after their estrangement she gave him a book, which he put away, intending to read it soon. But he lost the book and in fact could not find it again until the wife won back his favour—which she did by looking after his mother. In another example a man lost the key to the trunk which contained his evening clothes. His act was 'useful' since he disliked the thought of the particular evening on which he had to wear evening clothes. Freud himself admits that he

forgot the names of patients who were receiving free treatment. Elsewhere he discusses an error he made in writing that the father of the famous Carthaginian general, Hannibal, was Hasdrubal rather than (correctly), Hamilcar. Hasdrubal was in fact the brother of Hannibal. Freud's explanation is that he wrote the name of the brother rather than of the father because he himself would have preferred to have been the son of his own elder step-brother rather than the son of his father!

SLIPS OF THE PEN?

Perhaps we would make slips like these if we actually spelt out what we said.

Purchaser to shady dealer:
"Shall I give you a check?"

Batsman (*out after hitting across a straight one*):
"I was bold".

Hungry gambler (*to himself*):
"I'll have a good steak this time".

Freud maintained that unconscious processes are also responsible for what he called Defence Mechanisms—ways in which we defend ourselves from thoughts that are unwelcome.

Recognizing our own faults can be humiliating, especially for those of us who have an extraverted personality and do not normally choose to look within ourselves. It is easier to *project*—to throw our faults on to others—than to be self-critical. We do this unconsciously. For example a car driver cuts in on another vehicle and then criticizes another driver whom he has seen cutting in. He unconsciously recognizes his fault and then has to express his awareness of it. He does this by blaming another rather than himself. If he were told that he had himself just cut-in he would be incredulous.

In an experiment concerned with projection, subjects were asked to rate both themselves and each other on the characteristic of meanness, the opposite of generosity. Those subjects who were rated high on meanness by others were then divided into two groups as follows: in one group were placed those who had recognized the characteristic in themselves; in the other were placed those who had failed to recognize it in themselves. It was found that the group rated mean by others but not by themselves, tended to rate others as much more mean than did the group composed of those who were self-critical. Those who did not consciously recognize the characteristic in themselves unconsciously projected it on to others.

People sometimes use defence mechanisms because they have feelings of guilt. A mother who did not really want her child showed the mechanism of *reaction formation*, because she felt guilty about not wanting it. She reacted from her real unconscious feelings of dislike for the child by going to the opposite extreme and bestowing on the child every possible favour. Guilt feeling can also be seen in the use of the mechanism known as *repression* in which the memory of events is pushed back so far into the unconscious that recall of them is usually impossible. On one occasion a man was found wandering about the street, not knowing who he was nor where he lived. He was suffering from amnesia (loss of memory). By means of hypnosis it was possible to restore many of his memories and to discover what had taken place to cause this amnesia. He revealed, under hypnosis, that he had gone out on a drunken spree because he was unable to face difficulties at home. Such behaviour was entirely alien to his nature and he felt bitterly ashamed of himself. The only way in which he could defend himself from his intolerable guilt feelings was to lose his memory not only of the drunken spree itself, but of all the circumstances connected with it, including his own identity.

People use the mechanism of *rationalization* when they give a plausible reason for their behaviour because they do not wish to admit the real one. A student does not want to admit that he has embarked on a course of study which he feels is proving too difficult for him, so he does not attend classes, saying that the standard of teaching is too low. A girl fears she will not be invited to a dance; she

is heard to remark that she does not intend to go because she knows the band will not be good; it is less wounding to her pride to give such a reason for not going than to have to admit later that she was not asked to go.

EXCUSE? RATIONALIZATION? REASON?

Question

For what reason were you late?

Answer

I'm late because I overslept.

The answer could be:

(a) An excuse.
EITHER *untrue*. (I am saying I overslept, but in fact did not.)
OR *true* but planned deliberately. (I *consciously* did not wind the alarm because I *did not want* to wake up in time. I meant to oversleep.)

(b) A rationalization—true but unconsciously motivated. (I meant to wind the alarm but failed to do so. *Consciously* I wanted to be on time but *unconsciously* I did not want to be, so I *'forgot'* to wind the alarm.)

(c) A reason. (I wound the alarm but slept through it.)

Mechanisms of defence help us to maintain our sense of prestige and to avoid being self-critical. They are helpful to us, but if we make too much use of them they can be harmful. At times it is essential for us to gain insight into the working of the unconscious. For example, if a wife's dominance irritates her husband so much that he contemplates finding himself another woman who is less domineering, the happiness of the marriage is endangered. The marriage will probably be saved if the wife can be helped, with advice, to look objectively at the role she has been playing in the marriage. She will discover why she needs to dominate. One reason could be that she was insecure in her own childhood and experienced feelings of inferiority. She uses the mechanism of *compensation* in

her marriage, feeling, unconsciously, that she can only be secure if she is dominating the marriage. When she can understand why she needs to dominate she loses her fear of being dominated and is able to give her husband a chance to assert himself.

We often use mechanisms of defence to escape from reality. One way in which we can escape is by *identifying*, becoming (in fantasy) someone else. When we use the term identifying we must be careful not to confuse it with imitating. In imitation we *consciously* model ourselves on another, like a small boy who dresses up as a Red Indian. When we identify we unconsciously become one with the person with whom we are identifying, experiencing his success and failure, his pleasure and sadness. In an exciting film or novel we often identify with the hero. The author's subtlety is seen in his ability to create the kind of person with whom people will want to identify. A fictional character, such as James Bond, represents the sort of individual that—unconsciously if not consciously—many people would like to be. Mentally ill people sometimes find the real world so intolerable that they have to escape from it in fantasy. They do so by identifying completely with, for example, a character from history. They maintain that they are this character. They may be happy—and harmless—in such total identification, but they will be unable to live socially useful lives.

We cannot avoid using defence mechanisms. They are part of life. In this short survey of some of them we have seen that if a person uses them too much he can either harm himself or others. Because these mechanisms are unconscious processes they cannot be recognized by the user himself unless he is very self-analytical. When we see someone making too much use of a mechanism of defence we can help him to become aware of what he is doing if we question his statement rather than agree with what he says. When a driver accuses others of perpetrating the very errors which he commits himself, rather than agree with his criticism of others, we can be of more help to him if we reply, 'Have you ever done that yourself?'

Slips of the tongue and the use of the defence mechanisms illustrate two ways in which the unconscious plays a part in everyday life. Two other ways in which it can be observed are in hypnosis and in dreams.

Under hypnosis a person can be regressed—made to behave as though he were living in a much earlier period of his life. Adults when regressed to infancy react as they would have done at that age, as the following example shows. If one strokes the sole of an adult's foot, the big toe is found to turn down. Infants up to the age of seven months respond to such stroking by turning the toe up. Adults who have been hypnotized and regressed to the age of five or six months respond as infants of that age do when the sole is stroked: their toes turn up instead of down.

Judgments can be changed under the influence of hypnosis. A number of experiments have shown that poor children estimate from memory that coins are larger than in fact they are. Wealthy children tend to underestimate the sizes of coins. One experimenter hypnotized his subjects and then told them that they were poor; when they were asked to estimate the sizes of coins, they overestimated them. He then told them under hypnosis that they were rich; in this condition they were found to underestimate the sizes of the coins.

The following example shows a subject using the defence mechanism of rationalization after he has been hypnotized: during hypnosis he was given instructions which he was told he would carry out *after* he woke—on a signal from the experimenter he would go to a window and open it. On being roused from the trance the subject circulated among the people in the room, unconsciously keeping his eye on the experimenter. When the latter gave the signal by pulling his handkerchief from his pocket, the subject suddenly felt impelled to go to the window and open it, but hesitated to do so without a reason. He found a reason and rationalized by saying, 'Isn't it stuffy in here?', and then opened the window!

Freud attributed great importance to dreams. He thought that they represented a kind of half-way stage between the conscious and the unconscious. Freud suggested that when we are awake our conscience acts as a censor and prevents material that had been repressed into the unconscious from coming to the surface. In sleep the censor had 'dozed off', but was still partly effective. In dreams, repressed material will begin to come to the surface and give a glimpse of the thoughts and wishes in the unconscious.

Dreams are often confused. We might find ourselves dreaming

about a man called John who looks like another man we know called Bill. Why the muddle? Freud would have said that our dream was concerned with both people, John and Bill. Both existed in what Freud called the *dream thought*, the original thought that prompted the dream. In the journey to what he called the *dream content*—the actual dream—the two characters become mixed. It is as though we forget to wind on the spool in a camera. We have a confused negative which has on it the material of two or more pictures. Originally they were separate. It is superimposition that accounts for the muddle. Thus it is with dreams. The confused dream may have any number of sources.

During the transformation from the original dream thought to the dream content, a certain selection takes place; only the portions which are the most appropriate for the situation come to the surface. What may appear to be the most important details in the dream are of less significance than the apparently trivial incidents that only come back to memory in the second or third attempt to recall the dream. On waking, dreams tend to be forgotten—the censor is back at work again.

Freud thought that most dreams are wish fulfilments and that many of the wishes are ones of which we would be ashamed if they came into our conscious minds. Even in our dreams they are shown in symbolic form. For example: a man's hostile feelings for his father could be shown in a dream that he is walking along a road with a king or some other figure of authority. During the walk a stranger appears and tries to kill the king, but the man tries to save the king. The interpretation of the dream is that the king was the man's father and stranger was the man himself. The man appears in the dream both as himself and as the stranger. The stranger's attempt to kill the king and the man's attempt to save him show the conflict he is having within himself concerning his relationship with his father, the authority figure in his life: he both loves his father (and thus defends the king in the dream) and hates him (appears in the dream as the stranger who tries to kill the king). The part of himself that is hostile appears as a stranger because it is a part of his personality that he does not like to recognize. Thus beneath the manifest content of the dream is the latent (hidden) content that only the analyst can

interpret. But there is always the possibility that one analyst's interpretation will differ from another's. The experimentally orientated psychologist is understandably sceptical of Freudian theory because it cannot be tested under controlled conditions.

CHAPTER 14

THE INFLUENCES ON SELF

We have to learn to live with our own defence mechanisms as well as with those of other people. We must accept their existence, realizing that they only become a problem when our own relationships with others or our own happiness is upset. It does not help either the individual concerned, or society, to analyse, for example, an ardent churchworker's 'good work' and account for it in terms of sublimation of a repressed sex drive. But if a person is fetishistic and a 'do-gooder' who—perhaps unwittingly—pesters other people it may be helpful for him to be counselled in such a way that he begins to understand his motivation and he gains insight into the possible reasons for his behaviour and his excess of zeal. It is only when the use of a mechanism is being harmful that it is useful to try to modify it.

It is often helpful to look at oneself and one's motives in this way. The person who never reflects on what he is doing, who is oblivious to his effect on other people, is unlikely to go through life without giving a good deal of offence. The extreme extravert, the person who turns outside and never looks within himself, is the one who constantly blames others rather than himself; he is happy to be the life and soul of the party, but only so long as he can play the leading part; at his best he is a man of action rather than a thinker; at his worst a danger to society.

Most people do reflect from time to time on what they are doing and why they do it. Yet it is very easy to deceive ourselves, particularly because of the pressures that society exerts on us and because of the very understandable sense of self-importance that we all possess. We shall look briefly at these two factors now.

PRESSURES OF SOCIETY AND SELF-DECEPTION

People are fond of expressing their opinions; sometimes they preface them by 'I believe' or 'I think'; at other times they make what seem

to be statements: 'Blank *is* the best'. When we make such remarks we are trying to emphasize that statements and ideas come from ourselves and are part of our own nature or personality. We do not preface our statements by 'The many environmental influences to which I have been subject since my birth have led me to conclude that . . .'. Yet perhaps in fairness we ought at least to bear in mind that our beliefs and opinions are the result in part of the external pressures of our environment. To acknowledge thus that we are the victims of circumstance may deflate our egos and lessen our feelings of self-importance, but unless we do so we shall be apt to become prejudiced and over dogmatic.

A great deal of pressure is brought to bear by advertisements. Advertisers have a duty to the industries whose products they are bringing to the notice of the public. They must present the product in the most attractive light for the particular reader or listener that they see as the probable customer. A great deal of trouble is taken to present advertisements so that they will attract the reader or listener. The appeal is made either personally or in such a way that the potential customer feels himself involved. Often the appeal is to his sense of self-importance. The advertisement, 'Top people take the Times' appeared in other newspapers, and was designed to appeal to the ambitious youthful reader who hopes to make good progress in his work. He is ready to change his habits and identify himself with the strata of society that he wishes to join or identify with. It is suggested to him that to change his reading habits and take a particular newspaper is one way to help him to better his position and his image of himself. His goal is self-improvement and there are many pressures being exerted upon him to effect this.

One pressure, of course, is on the family household. A young married couple first lived in an isolated cottage with gas lighting and gas cookers. There was running water, but electricity had not reached that part of the hillside. They moved to a better house with mains electricity. At the end of the first year the husband counted up the number of electrical appliances—fifteen in all! They are certainly useful and having obtained them the couple would not like to be without them. The couple now consider them essential. At one time they were not necessary. This illustrates one way in which society exerts pressures.

In practice people who are reasonably well balanced and have a sense of values will not be swept away by pressures such as advertisements and by salesmen calling at the house, to the extent of running up heavy hire-purchase commitments which can only be met by a great deal of extra work that itself produces stress or affects the family in other ways.

PRESTIGE AND SELF-IMPORTANCE

It is probable that more troubles arise over the question of prestige than over any other feeling. People wish to feel they belong; they need to feel wanted. If they are rejected, or feel they are rejected, this sense of prestige suffers. Some respond by becoming silent, moody, resentful; others respond by being aggressive and over-talkative. Others may 'grin and bear it', thinking that however upset they feel, they should not show their feelings. There is perhaps less of this last reaction than there used to be in the days when the world was neatly divided into the leaders and the led, and when the example of the first was blindly followed by the second.

It is the sense of prestige that suffers when people are requested to perform some action that they had not thought of themselves. A request always puts the one who asks on a level above that of the one who is asked. If the person who is asked to do something is happy about such different levels, then he does not mind being asked. On the other hand, if he feels he ought to be in a position of equality he feels he may lose face by obeying. The question of who should dominate is a very real problem in many homes today. Women have achieved a position of equality which has in turn made things in many ways more difficult for them because there are more choices open to them; there is less certainty about what to do and how to do it. 'Theirs not to reason why' may have been a maxim fifty years ago. Nowadays everyone asks, queries, doubts and criticizes—very healthy in many ways but not necessarily resulting in peace of mind.

Thus in the home there are difficulties. In some homes positions are cut and dried—a sort of 'His-and-Her' atmosphere prevails: he has certain duties, she has others, and there is no argument or doubt. In others there is the older belief that the woman's position is to look

after and stay at home; the whole responsibility of the home is hers. The husband brings back the wages and receives his spending money. His active role in life is outside the home. Within he can be as passive as he wishes, unless he is asked to arbitrate or deal with a disobedient child or an unwelcome caller. In yet other homes, there may be a sharing of all responsibilities. Washing up, cooking, cleaning, even ironing and mending may be done predominantly by the wife, but with the husband sharing in the jobs.

Different systems operate in different homes and there is no one system that is objectively right. Problems occur if one partner is dissatisfied with his or her role, feels the other one ought to be different, cannot understand why he or she is not different. The wife may feel that her husband ought to help over the washing up. He feels that to do so may lower his status. He may recall how in his own home his own father never so lowered himself, or alternately, that his father did everything he was told, was virtually a 'doormat'. 'I am not going to have that happen to me' becomes the predominant feeling in such a man.

We see in the home what happens in the world at large. Prestige is very much at stake. If the government of a country did not oppose another's actions, it could lose face with new emergent states. If a nation fighting to prevent another being overrun stopped action, the withdrawal could be heralded as surrender. It is true that principles are at stake and a great and powerful country may feel it is fully justified in allying with one group in a small state against another. It will find many arguments to support its case. The angry husband or wife will also find arguments to justify the position he or she is taking. But basically in both personal and international situations there is fear of the consequences of surrender. We may be humble, but never so humble as not to protest loudly when wounded.

If we have looked at all the circumstances in a situation and at all past history and can be certain what will be the result of our actions, then we can act from a position of strength and confidence rather than from prestige.

The following experiment shows how opinion can be influenced when prestige is attached to a situation. Two groups of students were asked to rank professions such as dentistry, journalism and politics

according to (a) how much intelligence they thought the profession required and (b) the social influence of the profession. One of the groups was told that a similar group to themselves had previously been asked to do this task and had ranked politics high. The new group also ranked politics high and when asked to name which politicians they had in mind produced 'prestige' names such as 'Roosevelt'. The other group was told that a previous set of subjects had ranked politics low. This group also ranked politics low and when asked to say which politicians they had in mind produced phrases like 'usual neighbourhood politicians'. The experiment showed how easy it is to be open to suggestion especially if prestige is either deliberately attached or is withheld.

OBJECTIVITY AND SELF-PERCEPTION

To try to be objective and unbiased we must look at an issue from all sides. In a dispute we must try to see the other person's point of view. Strikes, to mention just one type of conflict, are solved only when both sides get together at the conference table and agree that the other has a point. Compromise is no more than this acknowledgement: that one's own view is not the only one—in all aspects of life there must be give as well as take. It is only in such a spirit that conflicts can be resolved. Conflicts are due to feelings. Words are used to explore feelings, and it is always necessary for the true feelings to come out. It is so easy, for example, to conclude that people who go on strike are interested only in money. Certainly it often appears so, but we all know that money in itself is of little use. It is what money can bring that matters. Not only does a higher salary enable a man to purchase more material things, but it often enables him to have longer holidays and shorter working hours.

Everyone wants to feel needed, and a valued part of the establishment. If manual workers are given fewer privileges than office workers, manual workers will feel not only that they get less money but that their services are less valued. We can understand their thinking in this way. The same thinking applies if a wage or salary increase is granted to people whose job we individually compare on a socio-economic level with our own. If teachers are granted an

increase, college lecturers also should benefit, together with educational administrators, and those in the health service who are concerned with the welfare of the young. To be underprivileged is to be not sufficiently recognized. If one does not have a good corporate negotiator to see that justice is done, then one is tempted to protest by downing tools and calling attention to oneself in the hope that one's cause will finally be looked on with sympathy. It is up to the independent arbitrator to ascertain the real reasons behind conflict if the two parties cannot solve the problem themselves. It is of course easier for the independent authority to judge objectively because he lacks feeling and prejudice. He does not side with either party in a dispute. He is thus better able to explore the real feelings, not just the surface tensions, that have sparked off the present troubles. There are always underlying troubles that are the real cause of wars; jealousy and fear are predominant. These are predisposing causes. The immediate causes, such as a political assassination, or the violation of a frontier, or the breaking of a treaty, simply spark off the event at a particular time in history. Without them, the date of the explosion might be different, but the explosion would still take place. Thus it is with strikes. The dismissal of one man, the decision to withhold a privilege, these small events in another situation would not in themselves promote a strike. They do so when tensions and disputes are active and feeling is running high. The real causes lie hidden amongst the complexities of personal relationships—lack of trust, suspicion, snobbery, fear, jealousy—these cause more misery among humans than physical hardships and deprivation. There is a social need in all of us to be valued and respected—to be made to feel that we matter—whether we be directors, managers, foremen or shop-floor workers, whether doctors or patients, teachers or pupils, party politicians or individual voters. The good group is the one where members have confidence in one another whether it be family, team, school, factory, commercial or governmental enterprise. Unless there is trust there cannot be happiness and there cannot be success. For man is a social creature and it is only through working with others that he can fulfil himself and his potentialities. Each of us must try to be aware of the other's point of view. It is always tempting to blame the other person. Insight and understanding begin

to show when the individual starts to share the responsibility for failure and is honest enough to admit he may be partly to blame for the unrest. It is sincerity and honesty that in the long run triumph—and not just the words alone, but the real feeling behind the words.

Perception of self can easily be distorted by the influence of other people. A child of mediocre ability who is constantly praised when his performances are poor will have a false sense of his own ability. He will perceive himself differently from the way others perceive him. Similarly a child of considerable ability who is constantly criticised will eventually perceive himself as inadequate or inferior. A critic, to be helpful, has to strike the right balance between praise and blame. Too much of one can easily lead to a person getting a false view of himself. If he once gets a false view he may try to retain it by using his defence mechanism. It is easier for him to explain his low marks in an exam, for example, by saying that he did not bother to work than to admit that his ability is inferior to that of his fellow students.

Thus it can be only education in the widest sense of the term that can lead to a new understanding. We can receive education on our own through the intermediary of another person whether he be teacher, doctor, lawyer, parson, probation officer, counsellor, or simply friend or relation. Or we can be educated in a group setting, in class at school, or in a club or society. In such groups we learn to cope with things; we master techniques to solve problems, but we also learn to get on with people. It is in the group that we learn to accept the need for giving as well as taking, of making ourselves subservient to the needs of others and of accepting the notion of sacrifice for the general good. Each of us needs help both in the individual setting and in the group setting.

CHAPTER 15

REWARD, COMPETITION—AND PUNISHMENT

Psychologists define the word reward as 'a positive incentive capable of arousing pleasure'. They study the learning ability of animals by offering rewards such as food or drink for correct solutions to problems. They find that, for example, a hungry rat will learn the correct path to the end of a maze more quickly if it finds food at the end of the maze than if there is no food. In everyday life people teach their dogs to sit up and beg by offering rewards such as biscuits or sweets. At school and college praise for good work, marks, and examination honours are rewards. In the adult world money and promotion are rewards. All such rewards have this in common: they are given *after* the task has been learnt or the work has been accomplished. Such rewards are called *extrinsic* rewards because they do not belong to the task itself; they are beyond or outside the task.

There are also *intrinsic* rewards in which pleasure accompanies the actual performance of the task; the task is enjoyed for its own sake; it is not performed simply for the extrinsic reward that comes after its successful conclusion. Hobbies are examples of activities in which the rewards are intrinsic. Effort and energy are required in a hobby but the work is pleasurable.

Many jobs bring both intrinsic and extrinsic reward. The work itself is intrinsically rewarding and the extrinsic reward in the form of money, for example, enables the necessities and luxuries of life to be purchased. Employers tend to stress the extrinsic reward of money when advertising a job which is comparatively well paid, because they believe they will attract many applicants. Where jobs are comparatively poorly paid, such as those of the nurse, parson or social worker, the intrinsic reward, the satisfaction of the job in itself, is accented. Nevertheless any job can be intrinsically rewarding. What is important is the attitude of the worker.

In order for a job to bring satisfaction, a person must feel that it presents sufficient challenge to maintain his interest. If it is too difficult, he will lose heart. If it is too easy, he will become bored and dislike it. The jobs in which intrinsic rewards are stressed are invariably concerned with people rather than with things. Work which involves helping people is satisfying, but it is also challenging because no two individuals ever behave in exactly the same way. No situation will be repeated; thus monotony can be avoided.

The farmer's work is analogous to the work of those who deal with people. The behaviour of animals is often unpredictable and, in Britain at least, the changeable climate ensures that skill is always required to secure the best possible harvest. The work will always be sufficiently challenging to bring out the best in those who undertake it.

Much factory work is repetitive and is concerned with things rather than with people. The work is challenging to the newcomer while he is learning his trade, but within a short time he has mastered the techniques sufficiently well to be able to achieve a high standard if he wishes. His attitude to his job will be influenced by the extent to which the job continues to challenge his abilities, as well as by the attitudes of those with whom and for whom he is working.

It is often found that those workers who are most reliable at carrying out simple repetitive tasks are of low intelligence, for example, those who have been educated in training centres rather than in schools (normal school work would have been too difficult for them). The simple, repetitive assembly-line task is within the ability of such people, and it continues to be sufficiently challenging for their interest to be maintained. Such workers have been known to cut short their allotted tea breaks in order to get back to their work. They do not feel ashamed of acknowledging that they enjoy their work however dull and repetitive it may seem to others. Their performance and enthusiasm demonstrate the fact that whether work is intrinsically rewarding or not depends under certain circumstances on the workers' attitude. What is boring work to one person can be fulfilment for another.

In contrast to the conscientious reliable worker who enjoys his work there is the man who is interested only in the extrinsic reward

of money, who aims to do as little as he can for as much money as he can obtain. This man may feel that such an attitude may elevate him in status to the foreman or manager whose task it is to supervise him—however unlikely that probability really is. It is more probable that he has not outgrown his adolescence in *attitude* even if he has done so in years. At some stage during adolescence pupils invariably 'test the limit' with their parents and teachers—to see how much they can get away with. They respect the adult who is firm but do not respect the person in authority—teacher or parent—who lets them get away with their attempts to 'test the limit'. This type of behaviour is to be expected during adolescence. It is not abnormal. But the adult worker who aims to 'beat the boss' in this way has carried forward an adolescent attitude to life.

There are other reasons why a man may work badly. If work is too difficult there is a temptation to do it badly rather than to admit that it is beyond one's capabilities. The man who slacks may feel—perhaps subconsciously—that he is capable of more responsible work and that his talents are under-employed. He may be ambitious, but has not succeeded in achieving as much as others of similar abilities and education as himself. He does not like the work he is doing and thus aims to do as little as he can; this is his method of protest—his defence. He is hitting back—often without realizing what he is doing. Adults—and some adolescents—who react in this way are victims both of their own inadequacies and of the competitive society in which they find themselves. The effects of competition in our society, at work and socially, impose an increasing burden upon us. Only knowledge of what is happening, of how we react, and an understanding of all these pressures and their inter-reaction can help us to adjust to them.

The pre-school child does not distinguish work from play. For example, he enjoys doing jig-saw puzzles, an activity which requires persistence and concentration and which is thus similar to work. His reward is intrinsic. He enjoys doing the puzzle; he does not require an extrinsic reward such as sweets or pocket-money in order to achieve success. Likewise in Primary schools, every effort is made by teachers to ensure that their pupils obtain pleasure from their work and enjoy it for its own sake rather than for the sake of extrinsic

reward. Pupils are encouraged to compete with themselves rather than with one another.

It is at the secondary stage of education that pupils are likely to have extrinsic rewards in the shape of marks and class positions offered to them. If these become the main incentives, there is a danger that the work itself will lose its intrinsic reward. Schools justify the existence of such incentives by stating that because their curricula are influenced by the examinations set by universities and other bodies, pupils have to do work that is not of immediate interest to them in order to qualify for higher education.

Industry shows us that the existence of competition helps to maintain standards. If a product does not give as good value as a similar one produced by another firm, sales of the one will fall and the non-competitive firm soon goes out of business. If competition is removed it is difficult to avoid complacency and a slackening of effort. Yet there is another side to the picture. The existence of competition can lead to pride and to jealousy, as the successful despises the unsuccessful and the unsuccessful is envious of the one who has succeeded.

When competition for extrinsic reward is introduced, everything should be done to ensure that the work still offers intrinsic reward as well as extrinsic. If a Sixth Former is studying subjects that he likes he will make better progress than if his sole motive for study is the extrinsic reward of the examination success. If a man is doing a job which gives him pleasure as well as money, he will experience a deeper sense of fulfilment. However great the extrinsic reward, it is difficult for anyone to retain his enthusiasm and his happiness if the intrinsic reward is entirely lacking. Ideally the main purpose of extrinsic reward is to help us over those periods when work presents difficulties. As members of society we have obligations. We depend on other people and they depend on us. However enjoyable our work may be there will be times when we act from a sense of duty rather than from pleasure. One of the purposes of education is to help people to realize that they cannot always do what they themselves want. Some activities are often thought to be pleasures rather than duties: playing football, dancing, playing the guitar, acting, and driving. But once we undertake any of these as a job, and are

committed to them by a contract, there will be moments when we want to be excused from taking part. Any activity, however pleasurable it seems at first, can become a chore, and correspondingly, any activity can bring pleasure, even doing the washing-up or polishing a floor—it depends on the individual and his attitude to the occasion.

People enjoy hobbies—yet these are activities into which they need to put effort and industry. Carpentry, dressmaking, assembling a radio, building a boat, playing a musical instrument, learning how engines work—all these are activities which are both absorbing and require skill, concentration, and intelligence. They may not count as work, but they require as much thought, time and persistence as is needed in work. That is a prime example of intrinsic reward.

PUNISHMENT

Psychologists define punishment as 'a negative incentive associated with pain'. The difference between reward and punishment is that reward says, 'Repeat what you have done', punishment says, 'Don't do what you have done again'. Reward gives approval for the activity to be continued. Punishment does not in itself indicate what ought to be done in place of the punished activity.

Punishment will be effective only if it is made to fit the criminal; what is a suitable punishment for one person may be unsuitable for another. There is much evidence that this modern way of looking at punishment is more effective and remedial (corrective) than the earlier attitude that the punishment should fit the crime.

The old idea of punishment, contained in such phrases as 'an eye for an eye' and 'a tooth for a tooth', was retributive. A man who suffered injury at the hands of another was entitled to make the latter suffer to the same degree—but no more—as he himself had suffered. If one man knocked out another's tooth, the latter was entitled to knock out one of the former's teeth. To do more than this would leave his adversary feeling that *he* was now entitled to exact something more in return for the extra injury he had suffered. To punish too harshly leads to resentment and causes the dispute to continue as each tries to pay the other back to a greater degree.

When it was the practice in this country (not much more than 130 years ago) to punish a man by death for stealing a sheep, it did not end the practice of sheep-stealing. Men stole because their families were starving; it was finally the recognition that this was the *real* problem that caused the law to be changed. Punishment is effective only if it is reasonable and does not produce a lasting attitude of resentment.

Retributive punishment of the type mentioned above involved taking some sort of physical action against the offender. During the nineteenth century, when most of our existing prisons were built, punishment became less physical. Instead, men were punished by being deprived of their liberty. Confinement in a prison cell gave a man the opportunity to think and obviously prevented him from committing other offences. It warned him what not to do; but it did not tell him positively enough what he ought to do.

Deprivation of liberty for even a short period is sufficient to deter some people from crime for the rest of their lives. The knowledge that certain offences lead to deprivation of liberty prevents a number of would-be criminals from ever committing them. At school, detaining pupils after school hours as a punishment for bad work or bad behaviour can be an effective form of punishment. Some pupils will offend once and never again. Others will not be deterred by 'detention' and will come to accept their weekly punishment as part of their school routine. For them detention has become an ineffectual method of punishment. Familiarity has bred contempt. As in the world of school, so in the world of adult life: society's problem is not how to deal with the first offender, but in the recognition that deprivation of liberty in itself is insufficient to deter some people from becoming second and third offenders and, possibly, habitual criminals.

Punishment must be positive. It must tell a man what he ought to do as well as what he should not do. The realization of this has led to the provision of training schemes in borstals and in prisons. Psychologists play an effective part in such schemes by testing the intelligence and abilities of those committed in order to find out the type of work for which each man is best suited. In a modern purpose-built 'open' prison men lead an army-type life and work for

eight hours a day on more constructive tasks than the traditional mail-bag sewing. They are also encouraged to take responsibility and to make decisions. In a modern maximum-security prison the same aims are found, although the same freedom cannot be granted as in an 'open' prison where men often go out to jobs in nearby towns.

If a prison is to be more than a place in which a criminal loses his freedom for a certain period of time; then—if it is to help him to reform—it must above all be a place in which he gains his self-respect. Those in charge of modern prisons realize this. 'Prisoners Are Called Mister' was the headline above the report in a daily newspaper about a modern experimental prison in Buckinghamshire. This is a maximum-security prison and confines men who have had an average of nine previous convictions. Yet the figures quoted in the report showed that only 18.9% of ex-inmates from this prison returned to prison, whereas the average percentage throughout the country of people who return to criminal life is about 30%. Inside the Buckinghamshire prison the prisoners are indeed called 'Mr'; they are allowed to criticize the staff and talk freely about anything that worries them. They can have plastic surgery for the removal of physical abnormalities—cauliflower ears, squints or tattoo marks are removed by skin grafts. Such treatment is necessary for men whose physical abnormalities have given them a sense of inferiority. Modern prisons with far-sighted staff and facilities for employing prisoners usefully enable men to return to ordinary life with a changed outlook and a social awareness that was previously totally lacking. A probation officer who has considerable experience of prison conditions and prisoners has estimated that of the 24,000 men in prison, only about 500 are permanent maximum-security cases requiring ruthless treatment. The rest, given the right conditions and well-trained staff, could be reformed. The recent Mountbatten Report, while not giving numbers, suggested that more prisoners could probably be placed in 'open' type prisons than is current practice.

It is difficult for magistrates and others who have to dispense justice to judge according to the offender rather than according to the offence, because many people think that the same offence should receive the same punishment. Yet because the feelings of individuals

differ, no offence can be exactly like any other. All the circumstances, including the motives and attitude of the offender, have to be taken into account before sentence is passed. When there is no understandable motive for a crime, psychiatric treatment rather than imprisonment will be recommended by the Court. The person who systematically steals from the supermarket has a clear motive: to obtain food without paying. The man who steals, for example, several articles of female underwear may be driven by a less obvious motive and is likely to be recommended for psychiatric treatment.

Children who persist in pilfering, like adults who steal without an obvious motive, may be trying to satisfy a basic need which is not being satisfied in the normal way. Possessions make a person feel important, and some children prefer to run the risk of being caught stealing than to remain feeling insignificant and unnoticed. To boast that he has pilfered, even when in fact he has not done so, may bring a boy status in the eyes of his contemporaries. He has a need to make himself seem important because he has not for some reason been able to form the right human relationships. The child who pilfers despite being caught and despite the efforts of parents and others to dissuade him, may unconsciously feel that his parents love him less than they love his brother or sister, or that he is less important to them than their own hobbies or work. The man who steals female underwear is using the clothes symbolically. Unable to build for himself a satisfactory relationship with a wife or girl friend he steals something which gives him a kind of imaginary power over women, and helps him to endure his frustration. In such cases psychiatric treatment may reveal the offender's true feelings and enable him to avoid future similar actions. Punishment might stop him committing the same offence for which he has previously been convicted but would undoubtedly deflect his antisocial behaviour elsewhere.

Being mildly punished can be preferable to being ignored. When a person is punished he at least knows that someone is taking notice of him. In an experimental study carried out in a school, one group of pupils received reward in the form of praise for their work, whatever their actual results. A second group received punishment in the form of reproof, whatever their results. Two other groups, one of which remained in the same room as those who were praised or criticized,

and the other of which worked in a separate room, were neither praised nor reproved. All four groups had been matched for ability in the work. The experiment took place over five days and on each day the pupils were given the results of their previous day's work, and, in the case of the first two groups, either praise or criticism. The performance of the praised group improved each day. On the second day the performance of the criticized group was as good as that of the praised group and better than that of either of the 'ignored' groups. On subsequent days the reproved group's performance deteriorated, but throughout the experiment it was better than that of either of the 'ignored' groups. The experiment showed the superiority of reward as an incentive, but it also showed that adverse criticism led to better results than when no comment at all was made.

In practice it seems that the threat of punishment is a more effective motivator than punishment itself. The presence of the policeman helps the driver to contain his impatience; the presence of the prefect stops the older boy bullying the younger. Teachers who are respected by their pupils rarely punish, but their pupils know that they are prepared to do so when a certain limit is exceeded. When punishment is necessary parents and teachers who use discipline that is firm but not harsh and who administer punishment promptly and consistently are not resented. The child who is given an immediate and justified punishment, who knows where he stands with those in authority, and who pays a consistent penalty for infringement, suffers less harm emotionally than one who is threatened with some vague and postponed punishment.

Most people are prepared to pay the penalty for their offences, but they like to start again with clean slates. No child or adult likes to feel that his past crimes are still held against him after he has been punished and 'paid the penalty'. Adults who have been reformed by enlightened treatment in prison, or by the help of psychiatrists or probation officers must be given a second chance by society; their past should not be held against them. When men have learnt to think responsibly and are allowed to live responsibly with society they are unlikely to return to crime.

No man is either completely good or wholly bad. Each of us is

striving for a position of balance and equilibrium. Each of us has qualities that other people recognize as good and each of us has less pleasant characteristics. A man may turn to crime and for a time his striving for balance is upset—he gives way to aggression, develops a taste for it and continues. Yet in the prison cell, when he has had time to calm down and temptation is removed, he may seem to the visitor like any other man—and the visitor finds it difficult to believe that this man could be violent. Isolation allows time for defences to break down, for a person to come face to face with himself. Separated from the gang, the aggressive teenager found guilty of brandishing a knuckle-duster is a pathetic figure, needing care and love as much as anyone. With the gang, of course, he can be a very different character. The presence of the others gives him the confidence he needs in order to assert himself. In the same way the sniper safely concealed in a pill-box can be very different from the same man firing in the open without protection. When hunted criminals are captured—usually offering little resistance—it is as much due to the effects of isolation as to the lack of food or sleep.

CHAPTER 16

FALSE JUDGMENTS

ILLUSIONS

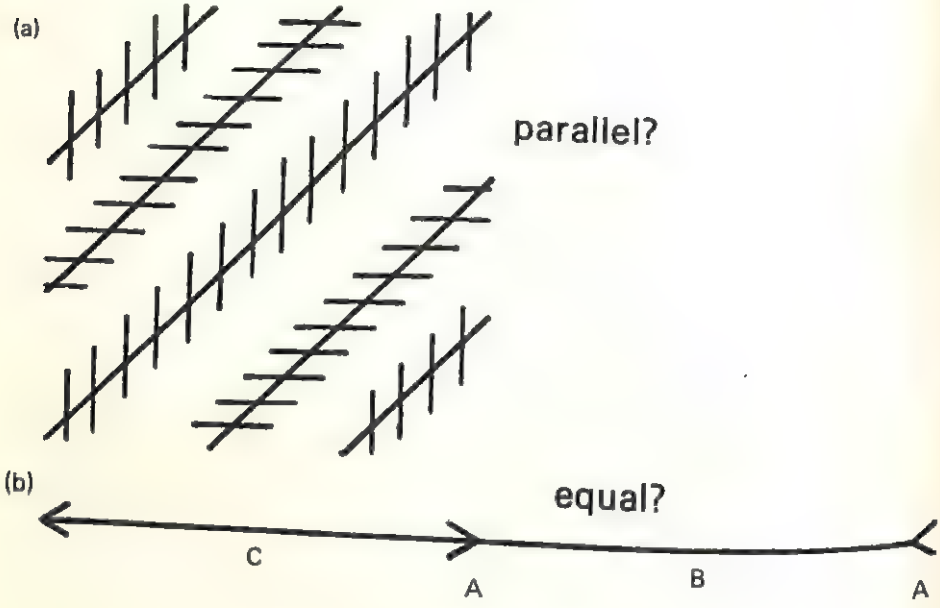
If we look with one eye at two points of light of different brightness but at equal distance from us, in a dark room, the brighter light will seem nearer. Let us suppose that either the size or the brightness of two illuminated balloons is varied systematically so that as one is made larger the other becomes smaller, or as one is made brighter the other becomes dimmer. What the observer in the dark room sees is not a change of distance or brightness but one balloon receding from him and other approaching him; he reports this, despite the fact that the two are equidistant from him and he has both eyes open! We are so used to associating bigness and brightness with nearness, and smallness and dimness with distance, that we perceive the objects in these circumstances as actually moving. It seems that our previous experience causes us to make assumptions which are untrue; we see not what is happening, but what we expect to be happening. We deceive ourselves. Experience and memory enable correct judgments to be formed; but experience and memory can also make us liable to false judgments. Take a piece of green paper or cloth and cut from it two shapes, one of a leaf and the other of a donkey. Show them to a friend and ask him which is the greener. His answer should bear out the fact that we are unfamiliar with green donkeys! Another well-known problem is this: Why does the moon seem larger when on the horizon than when above? Perhaps it is because the horizon always seems nearer and we are not used to judging distances in an upward direction.

Here are some more examples of false perceptions, optical illusions as they are called. First, look, then estimate, and finally measure the lines overpage.

The explanation for these illusions is that we cannot isolate the parallel lines in (a) and the equal lines in (b). One theory about the

Müller-Lyer illusion is that the outward looking angles at (A) make the line (B) seem further away and thus it is judged longer than the line (C) with the inward-looking angles.

ILLUSIONS

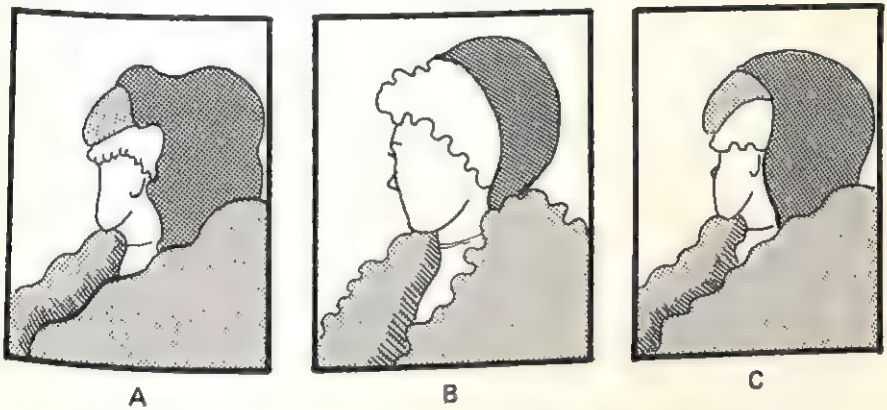


The Müller-Lyer Illusion

There is also much evidence to show that people's attitudes and previous experiences influence their judgment. Most of the experimental work has been carried out in the U.S.A. since the late 1940's. The general conclusion drawn from it is that we perceive what we value as different from what we do not value.

For instance, if we had no food for say sixteen hours and were then shown pictures which might be interpreted in many ways and asked to describe them, there is likelihood that we would mention more food-related objects in our descriptions than we would were we not so hungry. Again, were we asked to judge the size of food objects when very hungry we should tend to judge these as larger than similar-sized objects not related to food. In this type of situation the value we put on food because of our need for it influences our

judgment. Other experimenters have asked subjects to associate a disc or a poker chip with reward. The size of the disc or chip tends to be overestimated. An ingenious idea in a similar experiment was first to associate reward with one of two faces and punishment with the other. When the two faces were combined into an ambiguous picture subjects saw the 'reward' face rather than the other.



If reward is associated with A and punishment with B, the subject will see the 'reward' face A in the ambiguous face C which combines both A and B.

Working on a rather different line and using four pictures, another set of experimenters found that where subjects valued friendships and the company of people particularly, they tended to pick out and remember the one of four pictures that was of a face rather than the three others which were not of faces.

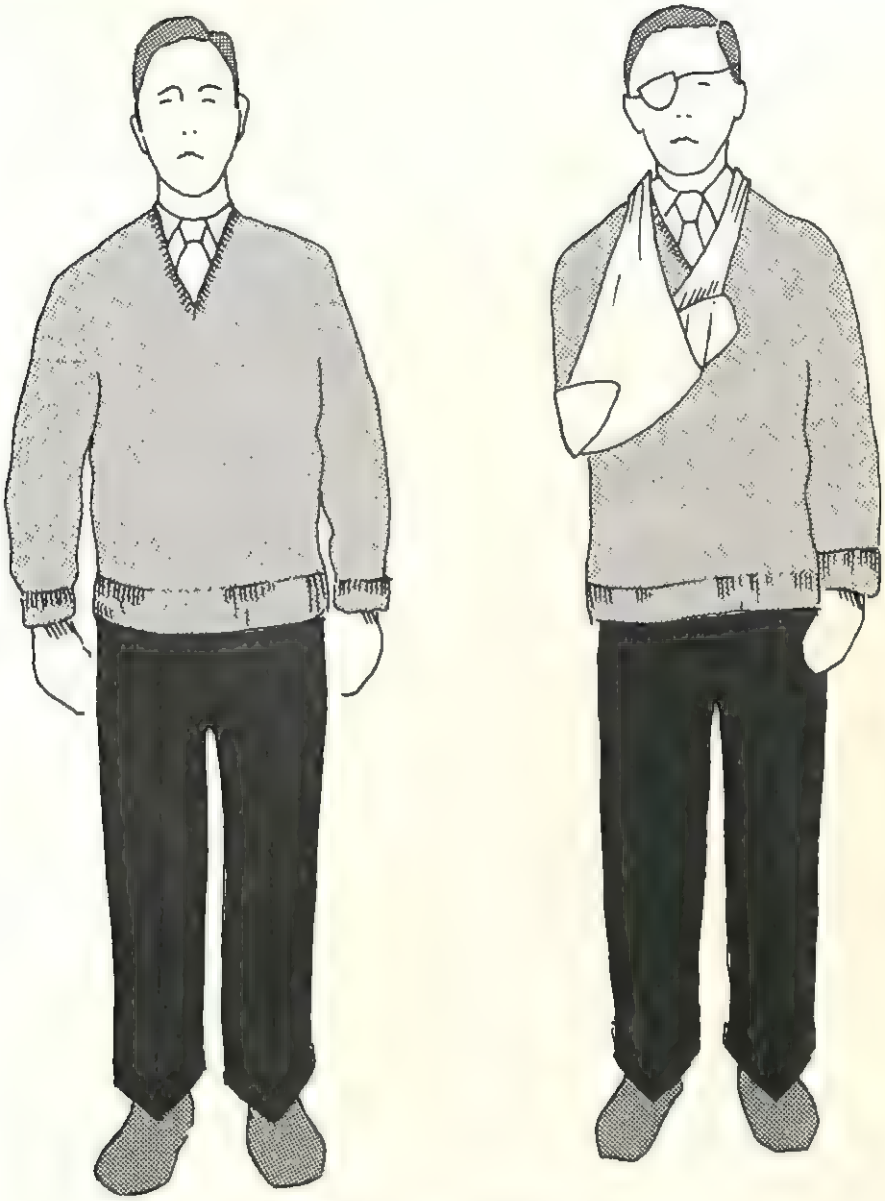
We may ask whether there is any underlying cause to account for the results of these value judgment experiments. Some experimenters known as the Transactionalists (those responsible for the balloon experiments mentioned earlier) have good evidence for one theory. For people whose vision is distorted a certain type of spectacles called aniseikonic is available to enable them to see correctly. If people with normal vision wear these spectacles, not surprisingly they report distortions, such as that the person they are looking at is leaning forward. The experimenters found, however, that when subjects wearing these aniseikonic spectacles were anxious, they

reported less distortion. They account for this as follows: Normally people view their superiors or 'bosses' with some degree of anxiety. If a naval rating was dressed up to look like an officer, his real identity being unknown to the subjects, he was seen as less distorted when they viewed him through the special spectacles than when in his ordinary dress. In another experiment subjects viewed through these special spectacles patients who had had limbs amputated and who, because of their appearance, were likely to make those looking at them anxious. Again less distortion was reported. It seems that anxiety made the subjects reject the distortions that they would normally have reported. Anxiety has a considerable influence on how we perceive people and objects.

Other experimenters have found that anxiety makes subjects take longer to react. Subjects are shown a series of words one after another on a tachistoscope (a device for exposing visual material for very short periods), and are asked to say the first word that comes into their heads after each of the stimulus words. If the words shown to them are emotion-provoking words such as 'love', they are found to take longer to give an answer than if the words are neutral words such as 'door'. The Galvanic Skin Response, G.S.R., mentioned in the chapter on Emotion, is also found to be higher when we perceive emotional words on a tachistoscope.

Psychologists use the word 'threshold' to define the point at which something can be perceived. Anything that can be seen is said to be above the threshold for sight; what cannot be seen is said to be below the threshold. If, using a tachistoscope, we display an advertisement on a screen either so quickly or so dimly that all that is reported is a blurr, it can be described as being shown 'subliminally', the word used to mean 'below the threshold'.

Some experimenters have concluded that emotional words shown subliminally have influenced the subject without his being aware of it. After the subliminal presentation the experimenter gave a signal for the subject to respond with a word. The response words have shown a greater connection with the subliminally presented stimulus words than would have been expected by chance. There is even a theory that subliminal advertising can be effective. However it is very difficult to prove this and even the experiments on subliminal



The same man, when 'wounded', provokes anxiety.

perception have been criticized on the grounds that the observer can perceive something, however vague, which reminds him of the actual stimulus word.

There is evidence that subjects who are asleep are able to discriminate and can be conditioned even though they are unaware of it. Some experimenters claim to have shown that we can learn while asleep. Their experiments have been criticized on the grounds that care has not always been taken to ensure that the subjects were not simply drowsy rather than fully asleep. Even if the claims are true more experimental work needs to be done in this field to determine whether material learnt in this way is retained better than that learnt while we are awake.

What is clear from all perception experiments is that there are very great individual differences in the way people perceive both objects and other people. Our social and cultural backgrounds, our upbringing at home and school, or own particular habits, activities and experiences all influence the ways in which we perceive things. In the act of perception, however objective we try to be (i.e. to see what *is* actually there) we cannot be rid of subjective influences. We cannot assume that others perceive or judge as we do. Factors like colour-blindness are of course understood fairly well by most people these days. Ignorance of some of the other perceptual phenomena described here sometimes means that we are not as understanding of other people's differences as we might be. In short, there is increasingly more evidence as time goes on that we should never judge others as we judge ourselves.

PREJUDICE

The word prejudice means pre-judging—i.e. judging before the full facts are known. Pre-judging implies coming to a conclusion too hastily, without sufficient thought. Very often people who are known to have prejudices refuse to give themselves time to think. They realize that were they to do so they might be forced to alter their opinions on the issue they are pre-judging. This is itself painful for it involves admitting one was wrong. So people tend to stick to their prejudices, often being apparently happy to admit to them.

No one can claim that he has never at any time shown prejudice. Even judges, men who have had years of experience in being consciously objective, of taking only the evidence into account and trying to suppress their personal feelings, would find it hard to maintain with all sincerity that in every decision they had made they gave to each fact the same weight and importance as every other judge would have given. Try as we may to be absolutely impartial it is impossible not to be influenced by the standards we have learnt to be the correct ones and thus which may well differ in detail from those of others. When we come to apply the standards, those that we deem most important are bound to be in the forefront of our minds. However much case law a man learns, no two cases can ever be exactly similar. The final judgment that is made must reflect a little of the personality of the judge. The good judge is not the man who crosses his heart and says he is entirely without prejudices; he is the man who realizes he may have prejudices and tries not to let that fact influence him. He is then being honest with himself, recognizing as he does that the influences of his background must have left him with beliefs and opinions which are weighted, however slightly, on one side or the other.

All of us, then, have prejudices and tendencies to judge certain issues too hastily. If we hold prejudices that are not held by others then we are apt to be called to account and some attempt is made to alter them. From time to time we hear of outbreaks of hostility in the U.S.A. directed against the coloured population. Such actions are said to be the result of prejudice and the perpetrators are punished when they are apprehended. Yet their hostility and violence would have attracted less attention in a former generation. It is not an action as such but what others feel about it that leads to it being approved or not. If the mass of opinion is against it, then the person responsible for carrying it out is branded as acting from hatred or prejudice. The two in practice are often very similar.

In the U.S.A. the extension of civil rights and an end to segregation in schools and on public transport is a means of elevating the coloured man, of enabling him to attain equality with the white man. It is significant that in the U.S.A. the South has always been more hostile to the emancipation of the coloured population than the

North. In the past, if not today, the South was poorer—work was less easily found and wages were minimal. De-segregation means that coloured people will have a better chance to obtain competitively positions traditionally held by white men. As a result, some of the whites may become less affluent. When one's own position is threatened one tends to act in self-defence. When this understandable human reaction is not controlled and rationalized the result is racial prejudice and disturbances.

Britain rarely reveals the overt racialism seen in the U.S.A. Britain has many immigrants but the majority work in jobs where there is a shortage of personnel—anything from medicine to road-sweeping. Except in isolated areas there is not at present a fear that white people will be put at a disadvantage. Here the immigrant steps into a job in accordance with his qualifications, where there is a shortage.

By blindly refusing to have contact with Communists, capitalists could prevent the chance of reconciliation which might come were they to meet round the conference table and discuss their differences. If we are afraid of something we tend to avoid it. To dismiss out of hand viewpoints which differ from one's own is showing prejudice, refusing to look at the other side of the coin, assuming that one's own biases must be objectively right.

Any political system can be abused and lead to exploitation whether it be capitalistic, dictatorial or even democratic. We can be led into a position of false security by democratic vote-catching leaders no less than we can be deceived by an unscrupulous tyrant. To refuse to acknowledge any disadvantage about one's own ideology is to argue from a position of bias, of prejudice.

Modern facilities such as today's swift, easy transport are enabling prejudices to be broken down more easily and quickly than in the past. Leaders of government meet round the conference table and thus are able to get to know one another. They may finally agree to differ, but this in itself is no small advance. The fact that they meet at all cannot help but bring their nations closer together, no less than the fact that ordinary people themselves now journey abroad in increasing numbers and meet the men and women of other nations. Some of the properly run schools' educational exchange visits do as much to break down national prejudice as international conferences

at higher levels. For when youngsters meet, genuine and lasting friendships are formed which may continue for years.

Within a nation there should be at least sufficient contact for different socio-economic groups to be aware of each other's virtues. Curiously enough this may often have been more the case in the master/servant days when each knew his station, than now when class barriers are supposed to have been broken down. In the old days there were of course abuses and some men no doubt treated their servants badly. But the loyalty of the old retainer is not to be dismissed lightly. There simply would not have been such loyalty had not the master treated his man with consideration and kindness, had they not both been aware of each other's different virtues.

Nowadays the formal barriers are few, and the old order of master and servant has largely disappeared. The acquisition of money enables individuals to cross into another class with comparative ease. Today's middle-class includes many people whose parents or grandparents would have considered themselves lower or working-class. Yet snobbery still exists, but the inverted type of snobbery (in which people of a lower class show scorn of those of the upper by deliberately avoiding behaviour reminiscent of them) is as common as the more usual form of snobbery. There are many circumstances that may cause a person to look down on others. It may be because they live in smaller houses, or because they look less tidy or clean; perhaps they drop 'h's' and pronounce 'i' as 'oi'. Or perhaps they own larger houses than they seem to need; and they may seem to pride themselves on their ultra-respectable dress; and speak with unnatural, affected accents. The person who gives himself airs is as much open to prejudice from others as the person who refuses to conform to accepted standards. If we are conscious of standards at all it is difficult not to look down on those who either seem to make no attempt to attain them or who over-reach the mark and exaggerate.

Envy, of course, must play a part in the building up of prejudices. The extreme socialist who is all for doing away with public schools envies the air of self-confidence that the products of these schools often have. The envy may be subconscious rather than conscious; the effect is prejudice. A person will project the anxiety he has about his

own lack of confidence on to those who possess it and this anxiety will emerge as dislike rather than fear.

Those who demand that the murderer be hanged are likely to be concerned about their own feelings of aggression. Those who would like to imprison all homosexuals may have an unconscious secret attraction for members of their own sex. Those who say they hate sentimentality may really want to be loved. Strong feeling and emotion such as is shown when there is prejudice may betray an unconscious sympathy with the object of dislike. The attractions of the unconscious are mysterious: it is because we fear them that we may dislike their objectives and defend ourselves by being aggressive.

Examination of the reasons why people are prejudiced show that it may be because of a need to feel superior. A person's need to feel superior may in turn be the result of an unconscious feeling of inferiority. The 'poor white' in Southern U.S.A. who is prejudiced against the negroes is making out that he is superior to them. Why does he need to do this? Possibly it is because he inwardly feels himself inferior to more wealthy or better educated white people.

Prejudice can easily lead to scapegoating. In the 1930s Hitler needed to find a group to blame for Germany's economic and social problems. It was easy for him to turn public opinion against that group which was on the whole prosperous, the Jews. In using them as scapegoats he turned aggression away from himself at a time when his position was by no means secure.

That prejudice, like aggression, can be the result of frustration is shown by the following experiment carried out in the late 1940s. American boys at a summer camp had their attitudes to Mexicans and Japanese measured. They were then frustrated by being prevented from going to the cinema. Later their attitudes to Mexicans and Japanese were again measured and were found to be considerably more prejudiced than they had originally been. Unable to show hostility to the authorities who had confined them to camp they displaced their aggression to a group which could not retaliate.

Prejudice is more likely to be learnt from other people who are prejudiced than from the actual object of prejudice. Children pick up the prejudices of their parents, particularly if they are trained to do so. A study of children in rural Tennessee showed that their

prejudice against negroes was due to the fact that their parents had told them to avoid negro children and objects that had been handled by negro children and had punished them if they were disobedient.

Prejudices can often be broken down when contact is made with the object of prejudice. During the last war studies showed that white American servicemen became favourable to negroes after serving with them in mixed units. Servicemen who were in all-white units did not necessarily alter their attitudes. Another study showed that American housewives lost their prejudices once they had settled down in a new mixed housing area to which they had been originally very apprehensive about going. These studies show that prejudices can disappear if people face up to them and give themselves the opportunities to lose them.

CHAPTER 17

MENTAL ABNORMALITY

The word abnormal means 'away from normal', different from normal. To decide whether words or actions are abnormal we must first have some idea of what is normal. We can define the word normal only by reference to the customary words and actions of the particular society in which we live. Customs differ the world over. Tribal dances round a totem pole are normal in some communities; to see a group of our own countrymen dressed up in war-paint and head-feathers indulging in such displays would be considered abnormal here. Morris dancing, although objectively equally unusual, would not be considered abnormal. Again, even in the same country, customs change with the generations. Fifty years ago, a woman seen smoking in public would have been considered by many as behaving unusually; today such behaviour is completely usual—or normal. It is very difficult to lay down absolute standards for normality and abnormality. There is no hard and fast dividing line, either between communities or within them. Where such a line seems to be drawn it is simply for the convenience of the majority of members of the particular community in question.

It is the habit in many countries for a person whose behaviour is so truly abnormal that, for example, he endangers the lives of others, to be isolated in some sort of institution. If the individual is considered responsible for his behaviour, and if an actual offence has occurred, then the institution will be a prison or Borstal; if he is considered irresponsible, then it will be hospital. As we know from newspaper reports medical advisers may sometimes disagree over this very question of responsibility. This is no reflection on their professional integrity. It merely points to the difficulties involved in establishing a means of measuring responsibility. With border-line cases there is bound to be some disagreement, just as there will be

between examiners assessing the performances of border-line candidates, or schoolmasters in deciding whether X is marginally an A or B stream boy. Ultimately judgment on border-line cases involves personal opinions, and these inevitably vary.

In mental illness there is a further difficulty. The doctor asked to deal with a pain in the stomach, a wheezy chest, or a broken leg can often feel, hear, or see what is wrong. If he cannot do so directly, he can have X-rays taken or use some other piece of apparatus for diagnosis. Often he can tell the patient what he has found and explain the treatment necessary. The doctor treating mental illness which shows itself in abnormal behaviour has a much more difficult problem, for the mind is not a specific part of the body located in a specific place. The brain is actual and we know where it is but often there is not any observable physical change in the brain itself when behaviour is abnormal. When patients are suffering from depression or anxiety, for example, the doctor cannot say 'the X-ray shows something wrong there', pointing to a particular area of the brain. His difficulties are thus far greater than when he is treating a physical ailment. Even when drugs have been found effective in treating mental illness, the full understanding of why and how they work is often incomplete. When lay-people are critical of psychiatrists (doctors who treat mental illness), they should stop to consider how much greater are the problems such specialists have to face.

How do mental illnesses show themselves? We must accept the fact that it is often merely quantity or quality that distinguishes normal from abnormal behaviour. All people at some time or other feel anxious or depressed. Anxiety becomes abnormal when it is prolonged or is concerned with some question or problem that should not cause undue worry. During World War II many people lived in constant anxiety thinking that their homes would be destroyed by bombs. This was normal. Nowadays this anxiety would be abnormal. In such circumstances a doctor would be consulted, but at least the patient would be aware of what caused the worry. The patient might say to the doctor: 'I'm constantly worried about the possibility of my house being bombed at night.' That is the fear troubling the patient and although it is only 'in the mind' the chances are it will eventually disappear if he is able to talk about it and then try to find

how such a fear arose. A mental illness where the patient is aware of his trouble can be grouped under the heading of the *neuroses*. Acute anxiety or prolonged depression characterize the neuroses, and because of his awareness of the worry, the patient will usually co-operate willingly with the doctor in the treatment. This may consist of some form of treatment in which the patient is encouraged to relax and express aloud all his thoughts and describe his dreams, while the doctor merely does and says enough to keep the patient talking. The doctor hopes that the patient will finally describe the actual incident, possibly in childhood, which began the train of thoughts that have led to the present disturbance. The course of such treatment may last many weeks or months, the emphasis always being to get back to the original trouble and release this verbally.

Neuroses, then, are usually those illnesses where the patient is aware that something is wrong, though he does not necessarily know the real cause or causes. The chief characteristic is worry—but so severe that there is loss of sleep, appetite and weight, and in extreme cases suicidal tendencies. For such symptoms there must be at least one cause, probably several, and it is unlikely there will be relief until these have been discovered. The neuroses can be grouped under three headings. First, *acute anxiety*—the state used to describe worry about particular situations. For example, a person may develop a phobia, or fear, that illness is caused by having dirty hands, and be so obsessed by this that he washes his hands at every conceivable opportunity, including the creating of opportunities when normally these would not be present. Second, *depression*—a term used to describe a general state rather than a particular or specific anxiety. The patient is usually preoccupied by unpleasant ideas, has guilt feelings and is always reproaching himself; he wants constant reassurance and may be unable to work or take any initiative. Third, *hysteria*, where the worry causes the trouble to be 'converted' or changed to a physical form. In hysteria a limb is often apparently paralysed and cannot be moved, although there is nothing physically wrong with it.

We group together under a different heading the *psychoses*, those illnesses where the friends and relatives know there is something wrong but the sufferer himself does not. The most common of the psychoses is *schizophrenia* (split-mind), in which behaviour can at

times be quite normal but this state alternates with contrasting periods of abnormality—though of course the patient is not himself aware of his condition. As a result, the patient cannot easily co-operate in his treatment and his behaviour is often undisciplined and aggressive. Schizophrenia is subdivided into three types: the *hebephrenic*, which begins in adolescence. It is characterized by a general silliness of behaviour, untidiness, incoherence of thought, and an inability to show any feeling for situations that normally produce an emotional response such as sorrow or joy. The hebephrenic tends to be silent; he changes his jobs fairly frequently and needs others to tell him continually what to do. The *catatonic* type of schizophrenic withdraws completely and is anti-social. Long periods of silence alternate with periods of violent rage; periods of stupor, where he stays rigidly rooted to the spot in the same posture, alternate with others of extreme excitement. The third type of schizophrenic is called *paranoic*, from the Greek word meaning 'beyond one's mind': the patient suffers from delusions (or false ideas) and/or hallucinations (where he sees things that are not there). He uses words he has made up himself, gives fantastic explanations about things and develops a feeling that he is being victimized; he can also be extremely conscious of his own self-importance. Paranoic schizophrenia can turn to true paranoia, where there is a fixed delusion that one is in fact another person or indeed even an object—such as a teapot in the case where the patient asked his visitors to pour him out. Such cases of paranoia account for no more than 2% of those in mental hospitals, though when some people think of mental illness they equate all such illnesses with madness and assume every sufferer will become a victim of a fixed delusion.

In trying to ascertain the causes of psychoses the psychiatrist can hazard even less reliable guesses than he can over the causes of the neuroses. It is noted that many psychotics have a history of broken homes and lack of parental care, and have never had any clear instructions about the sort of behaviour society tolerates on the one hand and abhors on the other. Yet we cannot say that psychosis is caused by a broken home, for many people from such homes develop normally, and there may be some deeper reason that causes both the break up of homes and produces psychotic behaviour. Recent

research suggests—and there is much evidence but no certainty—that some psychosis may be caused by physiological or chemical changes in the brain. That heredity plays as great a part in psychosis as it does in intelligence is shown by the study of identical twins who suffer from the illness as compared with binovular twins (twins developed from separate egg cells) and ordinary siblings (brothers or sisters). With identical twins, who are physically as similar as two individuals can be, there is an 86% probability that if one twin is schizophrenic the other will be; for such twins brought up together the probability is 92%, but even if they are reared apart it is as high as 78%. The corresponding figures for binovular twins is 16%; for siblings it is 14% and for step-siblings 1.8%. Inheritance thus seems to be a 'cause' though environmental influences cannot be discounted entirely and a good environment may mean that the schizophrenic symptoms do not show themselves. With neurotics there is no such positive correlation from the twin studies; so it can be concluded that neurosis is largely a matter of the influence of the environment.

If something is inherited, then the common factor must be a physiological or chemical one. Additional evidence for physical change in the brain comes from examination of patients who have suffered injury to their brains in accidents. These often show the same sort of inability to think ahead, plan, and bear in mind several points at once that is found with sufferers from schizophrenia. Thus it is suspected that the latter too may be caused by change, possibly due to injury, in the structure of the brain cells.

The conclusion noted above is at present conjecture, and indeed experts disagree about whether or not changes in the brain will be proved to be associated with mental illness. Even if this is proved, the possibility will remain that the mental or emotional condition causes the changes. If it is shown that the physiological changes do come first, we shall be forced to reconsider our views on responsibility. Just as we show sympathy to the victim of a crash whose brain is injured and whose behaviour as a result becomes anti-social, if it is found that physiological changes in the brain are a cause we may revise our present attitude and become less critical of those individuals who appear merely anti-social but are not yet clearly defined as psychotic. Can a person be blamed for these changes and their

effect on his behaviour any more than for the partial paralysis that results from a stroke and slurs his speech?

It has already been found that brain operations can alter a person's behaviour. In cases of extreme depression, when all other treatment has failed, patients are sometimes subjected to an operation known as prefrontal leucotomy. Certain nerves in the prefrontal area of the brain are severed or 'disconnected'. The patients' behaviour often changes radically: they become carefree and irresponsible, so much so that nowadays the operation is performed less often than when it was first found to produce an effect. Again there arises the question of responsibility—can people be blamed for behaviour arising from a physiological change?

A person who suffers from neurosis or psychosis is termed mentally ill. One who is born with such limited intelligence that he cannot be educated in a normal school is called mentally handicapped. Mental handicap may be inherited from parents, but more commonly it is due to developmental failure while in the womb or to injury to the brain at birth.

Parents of very low intelligence are liable to have children of very low intelligence though the children's intelligence may well be higher than the parents'. A number of the mentally handicapped thus inherit their low ability. They are at one end of what is a continuum, from very high to very low inherited potential. Many more are handicapped as a result of damage before birth or at birth. Thus it is quite possible for mentally handicapped children to be born to intelligent parents.

The commonest form of severe mental handicap is due to what is called the mongoloid condition. Here there are obvious physical characteristics such as short stature, small hands and feet, protruding stomach, soft skin, over-large tongue and slanting, egg-shaped eyes. The cause is unknown. Possibly it develops as a result of the embryo failing to find a satisfactory nutritional system while in the womb, and is more likely to occur when the mother is over 35. Mongols are found to have an extra chromosome, 47 instead of the normal 46; possibly the extra chromosome causes the condition.

Injuries to the brain at birth, due to lack of oxygen or premature separation of the placenta (the part that provides the embryo with

nutrition), may lead to damage over a large area of the brain, causing permanent impairment of intelligence. Nowadays the risk of this is very slight, but it is always highly desirable to take precautions to prevent such injury.

Since 100 has been fixed as the number to denote average I.Q., and a wide scale of measurement is used there must, by the law of averages, be those who have I.Q.s below 70, just as there are those with I.Q.s above 130. While the latter will fit happily into a normal school, the former will be unlikely to do so. Thus it is the policy for education authorities to have a number of purpose-built schools for what are called the educationally subnormal, in general for children with I.Q.s between 50-70. In such schools the classes are small—about a dozen children in each—and the work done suits each child's stage of development rather than his age. Pupils leave school at sixteen, and by that time they will in all probability be able to take their places in society.

The severely subnormal, those with I.Q.s below 50, are at present the responsibility of the Ministry of Health, rather than the Ministry of Education. Their education takes place, whenever possible, in what are called Junior Training Centres where the ratio of staff to children is about 1 to 5. The training is social. The variety of toys and apparatus enables the children to develop self-confidence and in time imparts the sense of achievement that a normal child shows at the nursery or infant school. They learn how to do simple repetitive tasks and how to go shopping. At the age of sixteen they go, if possible, to a Senior Training Centre where they do simple factory work and where their social and educational training also continues.

Through the skilled training that they are able to receive in the Centres and E.S.N. Schools, the handicapped are now enabled to fulfil their potential, to reach heights of achievement that would have been thought impossible even a few years ago, when such children were either kept isolated at home or had to live permanently in a hospital or institution.

CHAPTER 18

THE WORK OF PSYCHIATRISTS—AND OTHERS

A psychiatrist has the same initial training as a general practitioner or any other doctor of medicine. Following this training he then specializes in the study and treatment of those illnesses of which the causes are not primarily due to infection, organic disease or injury. He works in a hospital or outpatients clinic and it is here rather than in their homes that he sees his patients. In the present decade more and more patients are being referred to psychiatrists and there is no doubt that psychiatrists are under considerable pressure and cannot give the amount of time that they would like to the treatment of each individual patient. In this respect the situation in which the psychiatrist is placed is similar to that of the general practitioner. Some psychiatrists, but by no means all, undergo further training to enable them to become psychoanalysts. As we shall see, psychoanalysis is costly in terms of time and therefore in terms of money.

In recent years great strides have been made in the use of drugs. A physical illness such as tuberculosis, for example, has become a curable illness as a result of new methods of treatment by drugs, rather than (as used to be the case) by surgery. In mental hospitals, the padded cell, commonly used as recently as twenty years ago, is now rarely needed. Under sedation the potentially violent patient can be calmed.

As we have seen, most mental illnesses can be broadly classified in the two groups, neuroses and psychoses. It has long been known that the psychoses do not usually respond favourably to psychoanalysis—the method Freud claimed as the cure for the neuroses. It is this group, the psychoses—foremost among them being the schizophrenias—that are being treated increasingly successfully by drugs. While the causes of such illnesses still baffle experts, methods are

being found to treat the symptoms so effectively that a patient who has the disease may be able to lead a perfectly normal life. The treatment may have to be continued indefinitely but this is also often the case with, for example, sufferers from heart disease or diabetes. Drugs, correctly used, not only prolong life; they can enable the hitherto chronic invalid to lead a useful life. The emphasis is always on the *correct* use. Drugs, like food and alcohol, can be abused and it is then that damage is done. The tool in itself is neither good nor bad. It is the way it is used that counts.

The extent to which a psychiatrist will use drugs to treat the neuroses will depend mainly on the way he himself has been trained and also on the time he has available. If successful treatment can result from the use of drugs then it is obviously right to use these, since any method which uses words will be a much lengthier one. Time is always a problem.

Reference has already been made in the chapter on 'Fear' to the process of 'deconditioning'. A patient suffering from cat phobia had her symptoms treated by what is termed 'behaviour therapy'. Such therapy uses the symptoms that the patient presents and makes use of the principle of association. One form of behaviour therapy which has been used successfully with alcoholics is known as 'aversion therapy'—so called because the patient is turned away (averted) from a habit which he wishes to lose despite its hold on him. The alcoholic is turned from his attraction for alcohol by learning to associate it with unpleasantness. He is treated by being given doses of something to make him vomit just before he takes his alcoholic drink. After many such pairings he finds that the sight of the alcohol alone makes him vomit and he begins to look upon alcohol as distasteful. Treatment is of course lengthier and more complicated in practice than this brief account indicates.

Treatment which takes account of causes rather than just of symptoms uses words. Language is the gift given to man that other creatures do not possess, and it is through language that thoughts and feelings can be most easily conveyed. The patient's words are of greater importance than the doctor's in analytic treatment.

Some people feel that only the psychoanalytic couch will provide the answer to their 'problem'. They picture themselves relaxing in

subdued light in complete comfort, pouring out their troubles to a sympathetic expert who will then produce a 'magic cure' for their anxiety or periods of depression. This mental picture of the psychoanalyst is made up of a combination of witchdoctor, magician and personal friend—a wonder man who holds all the cards and knows instantly which one to play for the jackpot. Films and novels have done much to create this false image.

What in fact happens in psychoanalytic treatment? There is indeed a couch, because it is important for the patient to relax. The light is subdued, for bright lights are not conducive to relaxation.

The couch and the dim light enable the patient to relax physically and he is then invited to talk and to say whatever comes into his head. The analyst's role is primarily a passive one—he listens to what is said and he interferes as little as possible. Freud called the method in which the patient says whatever comes into his head 'free associating': one idea leads to another. It is important that the ideas are expressed rather than held back. Thoughts that the patient would normally keep to himself—ones in which he pictures himself in an embarrassing or distasteful situation should be released. Fantasies and the contents of dreams are also considered important by the analyst as these indicate feelings and thoughts which are below the surface, in the unconscious rather than the conscious. As the patient's story unfolds he will recall more and more of his past, including his childhood memories. Incidents that he thought he had completely forgotten will be revived and in thus reliving experiences through words he will express from his system ideas that are the causes of his anxiety.

The analyst listens rather than talks. He does not tell his patient what to do. He helps his patient to cure himself by reliving his past in words and thus bringing to the surface his underlying anxieties, the repressed thoughts that he 'never knew he had'. It is understandable that the treatment may have to go on for weeks if not months. To hurry a patient would obviously add to his anxieties, so the story must be told in the patient's own time and largely in the patient's own way.

So far we have mentioned treatment by drugs and treatment by discussion under separate headings. It is of course possible to use a

combination of the two. Time may not permit a full analytic treatment and many psychiatrists have not been trained themselves to give this. Yet the treatment through discussion that they can give will be based on the principles of psychoanalysis. So also will that of social workers who work under the direction of psychiatrists.

The fact is—as we all know—talking does help. Children tell their troubles to their parents, husbands talk to their wives, wives unburden to each other over coffee or simply on each other's doorsteps. When worry is not relieved by such ordinary everyday conversation they seek out the doctor, the parson or the social worker.

Thus while not adopting psychoanalysis as a means of treatment, social workers (probation and child care officers and also voluntary part-time workers such as marriage guidance counsellors) adopt the essentials of psychoanalytic treatment. They listen rather than advise; they continue to see their patients weekly or fortnightly for as long as is necessary. They attempt to do what many psychiatrists would do if time were not so short—to give long-term counselling. In order to do this successfully they have first to establish a relationship with the patient in such a way that the latter feels he can talk freely and confidentially. They thereby help the patient to sort out his own problem. For it is this last that many people really want to do even though they may initially ask for help in the form of advice or medicine.

NON-MEDICAL TRAINING AND THERAPY

Social workers and counsellors undergo selection and training. The training will involve study and discussion—ideas communicated by words. In training the social worker learns a method of approach, a 'technique' to enable him to help others. But it is not a method or a technique that anyone can learn, that can be imparted as easily as the technique involved in, say, driving a car. Personal qualities, what character the candidate already has—it is these ultimately that determine whether he will be able to help individuals who come to him. If he is unyielding and unsympathetic as a person, no amount of study will give him an acceptable technique. Thus selection for such work is as important as the training.

The study that such social workers undertake will not be as academically extensive as is required for a university degree in psychology. Knowledge of Social History and Social Administration is felt to be more relevant to their needs than requiring an extensive knowledge of laboratory based experiments. However, the psychologist in the applied field, working either in industry, in education or in a hospital clinic, is required first to study psychology at a university. He then undergoes a further period of training spread over one or more years, sometimes full-time, sometimes part-time. He is then equipped to work as a psychologist in one of the above three areas.

As a psychologist his job is to find things out. To illustrate by example what is meant by this: supposing a manufacturer found that a particular commodity was no longer selling as it should. He wishes to know why. He would call in an industrial psychologist whose job it would be to examine critically all aspects of the commodity—its price, contents, size, how it is displayed, how it is packaged, what kind of person buys it, whether there are similar commodities on the market. The consultant has initially to carry out a thorough investigation in order to discover the reason or reasons for what has happened. He will observe, interview, carry out pilot schemes, experiment where necessary with a product which has a different price, or is differently packaged, or which is slightly altered from the original. Having analysed and tested in this way, he should be able to predict accurately what changes should be made in order to ensure that the sales of the product improve.

He will follow much the same procedure if he is dealing with a problem that is the result of a conflict in human relationships. In a factory it may be that production has fallen for no apparent reason. Is it pay, conditions of work, fear for the future, exhaustion? Is it too lax or too tight a discipline, lack of trust, jealousy, envy, or anger? Is it the actual machinery that is at fault or a breakdown in the production lines where components are assembled? It may be one or several of these, or something quite different. The psychologist has to have an open mind, be ready to analyse, theorize and test, and finally to recommend.

If a child is referred to a child guidance clinic it is the job of the

educational psychologist to give him an intelligence test which may also show whether or not the child is emotionally adjusted. He will give the child an individual intelligence test, doing all he can to ensure that the child is at ease and understands the questions. This test will enable him to see how the child compares with others of his age-group. Obviously if the score is very low, part of the trouble may be that too much is being expected of the child at home or at school—or both. If the score is very high, it may be that the troubles that caused the child to be referred are based on the fact that he is not being stretched enough, has insufficient challenge for his talents. Emotional stability can be examined by questioning the child about home and school, by getting him to draw pictures, and by asking him to describe what he thinks is taking place in certain pictures he is shown. If his drawings are strange or if his reactions are unusual then it may be that he has not formed good relationships with his parents and/or other adults and age-mates and treatment is needed to help him to adjust.

The function of the educational psychologist is primarily to test, to find out information about the child that is not necessarily observable in his everyday surroundings. Treatment is given by the child psychiatrist and or the psychotherapist, both of whom have had a training orientated towards treating rather than investigating, though of course they have an understanding of the latter task. In the meantime the child's parents are seen by the psychiatric social worker who is able to help them understand both the child and themselves. When the child attends the clinic for psychotherapy, the mother may attend either on her own, or in a group with other mothers for discussion with the psychiatric social worker.

The word psychotherapy has been used but not fully explained. Both the first and second parts of the word derive from Greek: therapy means 'cure'.

First let us consider therapy as it is related to the individual. In physiotherapy, the body is massaged by an expert trained in understanding of how the bodily muscles and joints work; alternatively the patient undergoes some type of heat treatment. In psychotherapy it is the mind rather than the body that is the subject for treatment and the workings of the mind are shown, above all in

speech. Psychotherapy thus involves activity in which thoughts or words show the workings of the mind; it is used where there is some degree of emotional or intellectual upset. The psychotherapeutic treatment may be given either by a psychiatrist or by a psychotherapist, a psychologist with certain additional qualifications.

The therapy may simply take the form of discussion—interplay of words between therapist and patient in which the latter is encouraged to give expression to the thoughts that, whether he realizes it or not, are worrying him. Where children are the patients, the materials used in therapy are toys, games and apparatus. Children can express themselves through activity, play, drawing, even writing, better than through discussion, because this last demands a measure of self-understanding of which a child may not be capable.

Group, as opposed to individual, therapy involves either the opportunity for activity or for discussion, but there is present not one therapist and one patient, but a therapist and a number of patients. What are the advantages of group over individual treatment? A child usually welcomes the presence of other children. The presence of the therapist himself may be inhibiting, in that he stands above, as an expert, and it may be more difficult to be natural exclusively in his company than when others of one's own kind are present. So the children play with materials, sometimes with each other, sometimes alone, while the therapist is present as a sympathetic observer, ready to help by word or action where help is needed.

The child works his problems out of his system by what he *does*. In a sense he cures himself. The presence of other children helps him in a variety of ways. If he is apt to be unsociable, their enjoyment of their activities will help him to find something he enjoys doing, and thereby he will come into contact with them and grow to accept their company for its own sake.

With adults, therapy in the form of group discussion involves essentially a sharing of experiences, a realization that one's troubles are not exclusively one's own. With the therapist acting as chairman, guiding but not leading discussion, ideas and thoughts are presented that give people insight into their own problems as much as into the problems of others. It is when people understand difficulties that

they are able to accept them. When a group discover that they are all in the same boat, their anxiety is likely to be lessened—they are freed from the burdens that were weighing them down individually.

CHAPTER 19

ATTITUDES CAN CHANGE

Psychologists define attitudes as 'determining tendencies'. Attitudes can be favourable or unfavourable and are directed towards such targets as nations, races, groups, and general ideas and customs. They are broad in scope and are less liable to change than opinions. Our opinions reflect how we feel at the moment. They may be evaluations of a person or of a situation on which judgment is being passed. If the shop assistant is a pretty and charming girl we may buy more than we intended. A lavish meal bestowed by a business acquaintance may enhance our opinions of the products he sells or manufactures. Such swings are temporary. There may be a change within a day or so. Elections are won by capturing the opinions of the floating voter. In the safe seats there are thousands who have a firmly fixed attitude to party politics, who are not to be persuaded to vote differently from last time. To change a person's opinion is comparatively easy. To alter his attitude is often almost impossible. As we grow older our attitudes become more firmly fixed and resistance to change grows markedly.

When do attitudes develop? To answer that question we must first consider the connection between attitudes and personality. Often a person's attitude tells us a good deal about his personality, for his attitudes lead him to act in the ways he does. We can really only assess personality by what a person does or says. Thus it is not surprising to discover that attitudes begin to be formed, as does personality, during the earliest years of life and the earlier an attitude is formed the more it is resistant to change. It was the Jesuits who, long before the days of Freud, said 'Give us a child until he is seven, and then you can have him for the rest of his days', meaning that after seven most of the child's attitudes would be set for life.

When we talk of a person's 'attitude to life' what do we really

mean? Whether he respects other people, whether he is generous, whether he is persevering in the face of difficulties, whether he likes the company of other people or prefers to be on his own. If we study a pre-school child at home we see him developing social relationships, with his parents, with his brothers and sisters, his friends, with other adults. We are right to assume that characteristics such as sociability, generosity, amiability, perseverance are developing even in these earliest years. What is learnt early on becomes firmly established and is difficult to change. For evidence of this we have only to look at the techniques mastered in the development of skills such as walking, bicycling or riding.

No person is literally a 'born liar' yet how can he be expected to differentiate between what is commonly assumed to be right and wrong verbal behaviour, unless he goes through an effective and lengthy period of training?

Thus when we talk of changing people's attitudes, and when we are in positions in life when it is expected that we should be able to do so—such as a doctor, teacher, social worker, or prison officer—we must not fall into the trap of thinking that we have only to say a thing for it to be believed, or only to give advice for it to be followed. People may verbally assent that they agree with us, and possibly at the moment that they are talking they do honestly believe it and intend to try to alter their attitude and behaviour. But, as we find in a simple learning task, what is learnt at an early stage can interfere with the learning of fresh material and lead to the fresh material being quickly forgotten. What has been learnt already and what is habitual is still present in the memory system and it interferes with the establishing of the new attitude. We must never underestimate the part played in life by habit. Revelations about the harmful effects of smoking, when presented in dramatic form, do appear to alter people's attitudes. In practice, for a few months less cigarettes are smoked, and a number of individuals do modify their habits. But within a comparatively short time the ingrained habit of 'twenty a day' or whatever it may be reasserts itself and the pictures of tar-ridden lungs are less vivid in the mind. The effect of the statistics is only temporary for most people. Chest surgeons, however, are reminded day after day of what nicotine in fact does, and

one has little doubt that their attitudes and habits are in the main influenced accordingly.

Nevertheless despite the need for this caution, there is evidence that attitudes can be modified: where this is found we can assume that they are less ingrained because the seeds which occasioned them had been sown later in life.

Some years ago a number of studies were carried out in the U.S.A. to find out under what conditions people were apt to change their attitudes. As in all experiments, a control group was treated by one method and the experimental group by another. The groups of subjects were similar, and as far as was humanly possible the parts played by the experimenters were interchanged so that it could not be said that it was the individual rather than the method that was causing a difference in reaction.

The essential difference in methods was simply this. The control group was given a lecture on a topic and the experimental group was allowed to discuss the topic. The subjects were housewives and what was being investigated was whether they altered their attitudes to such practices as the buying of offal or orange juice significantly more when treated by the one method rather than the other. The conclusion reached was that the lecture method did not lead to a marked change when it came to carrying out what was being advised, whereas those who discussed the change did in fact alter their practice.

The fact is that however well presented a lecture, however logical the argument, however convinced people may feel when they hear it, they are nevertheless apt to feel they are being 'got at' if the attempt is being made to persuade them to carry out some specific action. If this is the case, they are immediately put on the defensive and think up counter-arguments, if not at the time certainly afterwards. If, on the other hand, they are allowed to put their views or counter arguments during discussion, and if facts are presented as objectively as possible so that they feel any final decision to act comes from them, they are more likely to embrace all the arguments and feel personally involved in the total situation. A further study carried out by another investigator proved that it was important for there to be decision after the discussion. The decision did not need to be made

in public, but it was found that action in fact followed in the desired direction if, before discussion ended, the subjects had decided to try the new product. Yet it remained true that they were more likely to make a decision after discussion than after a lecture.

If we think about it, common sense observation bears out what has just been said. Invariably these days, after a lecture, there are questions. It is often during the answering of questions that the speaker, if he is a good one, is at his most convincing. We remember the answers given to our questions; we feel more personally involved in the situation when the question comes from us. Probably, if a really good lecture or sermon is analysed, it will be discovered that people thought it good because the lecturer as it were anticipated their questions and gave answers that could be fully comprehended.

Thus, in university life, tutorials and seminars, at which there is open discussion, play an increasingly important part, although lectures may be retained as the major stimulus to intellectual enquiry. In schools and in all places of learning, more and more time is given to discussion, by the question and answer method, as it is realized that understanding does not always follow merely from explanation. Where the lecture method failed to make the housewives go out and buy offal, it may have been that they did not grasp the arguments well enough.

Industry is another field in which attitude change has been investigated. When a new method or procedure is being suggested, this may mean that a worker has to change his habit of making a particular movement as he plays his part in the production line. A change of habit will involve a change of attitude. How can this be best effected?

Once again one can only make general statements as a result of controlled studies in which workers were treated under different conditions. One of these studies relates to change of procedure in a clothing factory. One group of workers was told simply what the change was to be and asked to put it into effect; from another, representatives were called to a discussion, and in a third group, all members took part in the discussion, in which the pros and cons of the new method were gone into, suggestions were asked for, and the group in general were made to feel that their co-operation was being

enlisted. In both the latter groups the change-over was effected smoothly and the rate of turnover was as the management had hoped for; but, from the first group there was aggression and no improvement in the rate of production. Many other studies have borne out the same fact, that where workers are made to feel their opinion counts, where they are allowed to participate in the establishing of new procedures, where, in short, they are shown to be respected and trusted, they will respond with better effort. A conclusion drawn by one British writer, that there are no bad workers, only bad managers, may seem excessively harsh but certainly there is some truth in such generalizations.

The tolerance of discussion, the admission that there are two sides to every question, the suggestion that authoritarian methods do not achieve the best results, all these lead one to consider to what extent the opinions of subordinates should be countenanced. On the whole there is good evidence that much more is to be gained by finding out what people think about their conditions of work, treatment by supervisors, chances of promotion and need for amenities. Consultation at all levels is desirable, and no manager can assume his factory is 'one big happy family' unless he has taken real care to find out what his workers' views are. One good method is the use of a questionnaire which is simple to complete, simple to score, and which of course respects anonymity.

Supposing, for example, a new factory manager wanted to know whether workers in the factory felt satisfied about the system of promotion. If he presented them with a questionnaire designed as below he would be more likely to gather exact information about their opinions than if he asked for a simple 'yes' or 'no'.

Put a tick in one of the five brackets below to indicate how you think desirable vacancies are usually filled.

( ) A. By bringing in people from outside the factory.
( ) B. By promoting favoured employees who are not specially qualified.
( ) C. By promoting employees who have served the company for a long time.
( ) D. By promoting the person with the best ability for the job, irrespective of length of service.

( ) E. By promoting the most deserving, based on both ability and on length of service.

If he found that the majority of employees ticked (B) he would find it worthwhile to take steps to alleviate their grievance by discussing it with them and either assuring them that their opinion was based on false information or, if their opinion was correct, that such would not be the practice in the future. Morale, and therefore work, is liable to suffer if people are not given a chance to air justifiable grievances and have them fully discussed.

Pre-conceived ideas can be very powerful. We adopt them because 'everyone else does', because our parents have them, because it makes life easier to do so. Actual experience often leads to more profound changes in attitude than we find when words, rather than sense perception, are the medium.

CHAPTER 20

MAN IS A SOCIAL CREATURE

In every human being there is a smaller or greater conflict of wishes—on the one hand to be dependent on other people, on the other hand to be independent. In some people the conflict is barely recognizable; they conform easily by accepting without question the laws, rules, and standards which they find in society. Alternately, in a few instances they opt out of society and live as hermits, isolating themselves from others. Most people, however, experience a very real conflict of wishes at some time during their lives, particularly during adolescence. During such a period they find it hard to accept that because man has become a social animal he has also become of necessity a rule forming animal. Society cannot function without laws and rules; the former will be written, many of the latter will be unwritten; unwritten rules are no less important than written ones. There must be recognition in society that some actions are done and others are not done or else there will be chaos. Beyond this, there must additionally be the recognition of a common goal in order for a group to be united and remain in existence for any length of time.

Social psychologists divide groups into (a) primary and (b) secondary. The definition of a group is two or more individuals who unite for a common end. Again, by definition, a primary group is one where there is face-to-face interaction, or, more simply, where all members know each other. Thus a family is a primary group, as are the local branches of the Women's Institute, Mother's Union, British Legion, as is a Scout Troop, Beat Group, or Brownie Pack. A class in a school is a primary group, as a complete school can be—*if it is small enough*. The local branch of the Conservative Party is a primary group, but the Conservative Party as a whole is a secondary group, as is a normal-sized school, or a village; as are the employees of a large factory, the passengers in an Atlantic liner, the members of the

M.C.C. A secondary group differs from a crowd in that in the latter no common purpose can be discerned; there is no binding factor such as a common destination, a badge, or method of dress or behaviour. Yet a crowd could become a group, as for instance when the passengers on a bus are involved in an accident and there is immediate action and interaction; a crowd becomes a group when common purpose, leadership, communication, and group-interest rather than self-interest can be discerned.

In a primary group there is personal contact between the members, some sort of talk or activity that they indulge in together. However, it is the secondary group that decides rules and standards. That 'a country gets the government it deserves' is a truism that bears out the generalization that the secondary (larger) group influences the primary (smaller) group. In a school, the individual classes take their tone from that of the school as a whole, rather than vice versa. In Britain today there may be exceptional families where children wear Eton collars on Sundays, where television is thought to be wrong, or where father is addressed as 'sir', but generally there is a tendency to bring up one's children as other families do. This upbringing will be in accordance with the spirit of greater toleration that has grown during this century, though most parents still recognize some need for discipline and obedience. The prevailing atmosphere in the nation as a whole filters through to the individual home. The prevailing tendency towards encouraging change (as seen in the bringing out of new models each year of cars, television sets or washing-machines) brings awareness that everything is in a state of flux, that to 'get with it' may be within our powers, but to 'remain with it' is difficult if not impossible. Thus expressions like 'the modern outlook', 'young idea', 'old-fashioned', simply point to this fact of constant change. Parents assume responsibility until a certain stage, but the day must come when they decide, 'He's old enough to know his own mind' (which in some families may be 21, in others, 18, 15, or even 12). Thereafter parents try not to interfere. We might typically define parents' attitudes by using statements such as 'He is young and we are too old to understand him', or 'The young do this nowadays' or 'He is old enough to decide for himself' or 'That's the way his friends carry on, so I suppose it's all right'. Thus teenage

irresponsibilities may be tolerated because 'It's the fashion' or 'Young people grow up so quickly these days'. But we must be aware that this is a shifting of responsibility to the non-existent shoulders of 'they'. Good parents can limit the degree of freedom they allow their children commensurate with the mutual trust they have built up as a family and the social pressures coming from outside the family. The fact that in the way they bring up their children, parents seem generally to have 'moved with the times' points to the stronger influence of the secondary group over the primary, the nation as a whole, over the home.

Though rules exist in a home, they are not normally written down as they are for the members of a club. We can define a club; it is a group formed for a specific purpose, to play football or cricket, to promote the interests of a political party, to provide entertainment for the over sixties. Each new member has to be willing to conform and agree to a certain code of behaviour. To have written rules simplifies the process of membership. A code of written rules in a club plays the same role that the law of the land does in the country as a whole. The Law is above the government, even though the latter may be responsible for making it. Once a law is made, even the individuals who formulated it are subject to it in the sense that they too must conform. So too with the club rules. To point them out tactfully to an errant member carries greater weight than to remind him what the Chairman said at the last General Meeting or what one knows the President feels to be right. The rules have been formulated by the majority decision of the members in a democratically run organization. The individual who disagrees with one of them has the right to express his opinion, to try to get the rule changed, or withdraw his membership if he thinks fit. In the country as a whole, withdrawal, in the sense of emigration, is possible for those who are seriously discontented.

One can find justification in the assumption that there was a good reason behind every law or rule that has ever been made, *at the time when it was actually formulated*. The laws relating to income tax, speed limits, licensing hours, divorce, were no doubt hotly debated before being placed on the statute book. All sides of the questions were publicly thrashed out and the law represented a majority

decision made for the good of the country as a whole, if not for every individual. For example, it was a sharp increase in cases of drunkenness that prompted the licensing laws at the turn of the century; an increase in the number of accidents in the 1930's prompted the 30 m.p.h. speed limit and later on, the compulsory driving test; the obvious relationship between accidents and amount of alcohol in the blood brought about the breathalyser. As these laws are handed down and become tradition, so they may tend to be more and more abused because the next generation does not see the need for them or feels that circumstances have changed and amendments are needed.

Some laws and rules do become absurd within the current environment and need to be changed. Others become unpopular with some people who have never experienced what life would be like without them and who do not therefore really understand why they are necessary. Experience is the best teacher and there may be a tendency to take less seriously what one has not learnt by experience. Once bitten leads to being twice shy. Yet because life is short and there is increasingly more to learn much has to be taken on trust. People's ability to reason enables them to visualize what life would be like without laws and rules and thus to accept them.

The foregoing points clearly to what it is that enables a group to function effectively over a period of time, namely a clear understanding among all members of the purpose of the group (of whatever composition the elements of that group may consist) and how this purpose can be fulfilled. If rules are imposed and accepted reluctantly, then group atmosphere will subsequently suffer. In some organizations (such as schools) it is often only the people in authority who formulate the rules; the pupils are expected to obey whatever such rules impose. Whether in fact they are obedient depends on the atmosphere of the school as a whole. When children rebel against authority it is often because they do not understand the reasons behind the rules imposed. Quite often when there is discussion and such rules or sanctions are explained, and when there is tolerance of an opposition viewpoint, hostility disappears and the rebel decides to conform because of his new understanding.

If we ask what binds a group closely together and shows it

functioning at its best, the answer can be summed up briefly in the phrase 'a challenge that has been accepted'. Often the challenge may be presented in the form of an attack from without, as when a nation becomes completely united when all feel threatened by a common danger. Britain in 1940 was united as never before when the threat of invasion was real. Nevertheless while it may be the threat of danger which, for example, brings a country or even a village together, there are circumstances not connected with a common danger that also enable a group to function at its best. The football team that pulls together does not do so merely to avoid defeat or relegation. The desire to win, to reach the top of the league table, to have a better season than ever before, all these positive factors may promote the good 'spirit' that prevails both in training sessions and in matches. Here, the challenge is accepted before the opposition is even encountered on the field. Possibly the most binding influence is when all members of a group accept a viewpoint such as 'The spirit in which the game is played is more important than the result'. This may not necessarily lead to more victories, but by its acceptance of such a principle the team has consciously denied that victory is the most important aspect. It puts something else, over and above the actual results of a game, thus creating an atmosphere which leads the members to think of others rather than themselves.

There is no doubt that good group atmosphere has been created in many a town or country organization which was originally set up to accept the challenge presented by 'Freedom from Hunger', 'Oxfam', 'Save the Children Fund', 'Thalidomide Babies', 'Christian Aid' and others. To promote schemes whereby the hungry and sick can benefit, individuals from different backgrounds have come and worked together, have sought to see the job through so as not to let the others down. No man himself can ever claim that his actions are altruistic, for he cannot judge his own behaviour objectively. But if independent judges analyse the spirit or atmosphere prevailing in different groups they will conclude that this is at its best where individual members are pooling resources for a common good, are looking outward in this service, rather than inward.

SUGGESTIONS FOR FURTHER READING

I. General Introductory Texts—recommended for intending University Students and for 'A' Level Students.

Hilgard E. and R. C. Atkinson. Introduction to Psychology, Methuen (4th Ed. 1968).

Morgan C. T. and R. King. Introduction to Psychology, McGraw-Hill (3rd Ed. 1966).

Munn N. L. Psychology—The Fundamentals of Human Adjustment, George Harrap (5th Ed. 1966).

II. Recommended in connection with specific chapters.

Chapter I

Cohen J. (Ed.) Psychology—An outline for the intending student. Routledge & Kegan Paul.

Miller G. A. Psychology—The Science of Mental Life. Pelican.

Chapter II

The following articles from the 'Scientific American', obtainable as offprints from W. H. Freeman & Company Ltd., Warner House, Folkestone, Kent, price 2s. each.

No. 429. Harlow: Love in Infant Monkeys.
473. Harlow and Harlow: Social Deprivation in Monkeys.
416. Hess: 'Imprinting' in Animals.

Mead M. Male and Female. Pelican.

Chapter III

Bowlby J. Child Care and the Growth of Love. Pelican.

Eysenck H. J. Fact and Fiction in Psychology. Pelican.

Winnicott D. W. The Child, the Family and the Outside World. Pelican.

Chapter IV

Carter C. O. Human Heredity. Pelican.

Eysenck H. J. Check Your Own I.Q. Pelican.

Eysenck H. J. Uses and Abuses of Psychology. Pelican.

Scientific American Offprint No. 11. Gerard: What is Memory?

Chapter V

Hunter I. M. L. Memory. Pelican.

Chapter VI

Mace C. A. The Psychology of Study. Pelican.

Chapter VII

Hadfield J. A. Childhood and Adolescence. Pelican.
Miller D. The Age Between. Cornmarket/Hutchinson.

Chapter VIII

Eysenck H. J. Sense and Nonsense in Psychology. Pelican.
Woodworth R. S. and Schlosberg H. Experimental Psychology, Ch 5. Methuen (Revised Ed.).

Chapter IX

Scientific American Offprints
428. Funkenstein: Physiology of Fear and Anger.
407. Livingstone: What is Pain?
457. Melzack: Perception of Pain.

Chapter X

Lorenz K. On Aggression. Methuen.
Storr A. Human Aggression. Allen Lane.

Chapter XI

Eysenck H. J. Fact and Fiction in Psychology. Pelican.
Scientific American Offprint No. 425. Brady: Ulcers in 'Executive' Monkeys.
Swaim L. T. Arthritis—A Christian Doctor Speaks (Guild of Healt Publication No. 8—obtainable from 26 Queen Anne Street, London W1M 9LB).

Chapter XII

Barnes K. C. He and She. Darwin Finlayson.
Schofield M. The Sexual Behaviour of Young People. Pelican.
Wright J. D. About Drugs. Pamphlet obtainable from The Health Department, 59 Waterloo Road, Wolverhampton.

Chapter XIII

Freud S. The Psychopathology of Everyday Life, translated by A. Tyson, Ernest Benn.
Hadfield J. A. Dreams and Nightmares. Pelican.
Stafford-Clark D. What Freud Really Said. Pelican.

Chapter XIV

Scientific American No. 450. Asch; Opinions and Social Pressure.
Brown J. A. C. Techniques of Persuasion. Pelican.

Chapter XV

Fyvel T. R. The Insecure Offenders. Pelican.

Chapter XVI

Foss B. (Ed.) New Horizons in Psychology, Ch. 3. Pelican.
Vernon M. D. Psychology of Perception. Pelican.
Scientific American Offprints.
407 Ittleson and Kilpatrick. Perception
487 Kolers. The Illusion of Movement.
438 Wittreich. Visual Perception and Personality.
623 Hyman and Sheatsley: Attitudes toward Desegregation.

Chapter XVII and Chapter XVIII

Stafford-Clark D. Psychiatry To-day. Pelican.

Chapter XIX

Brown J. A. C. The Social Psychology of Industry. Pelican.

Chapter XX

Sprott W. J. H. Human Groups. Pelican.

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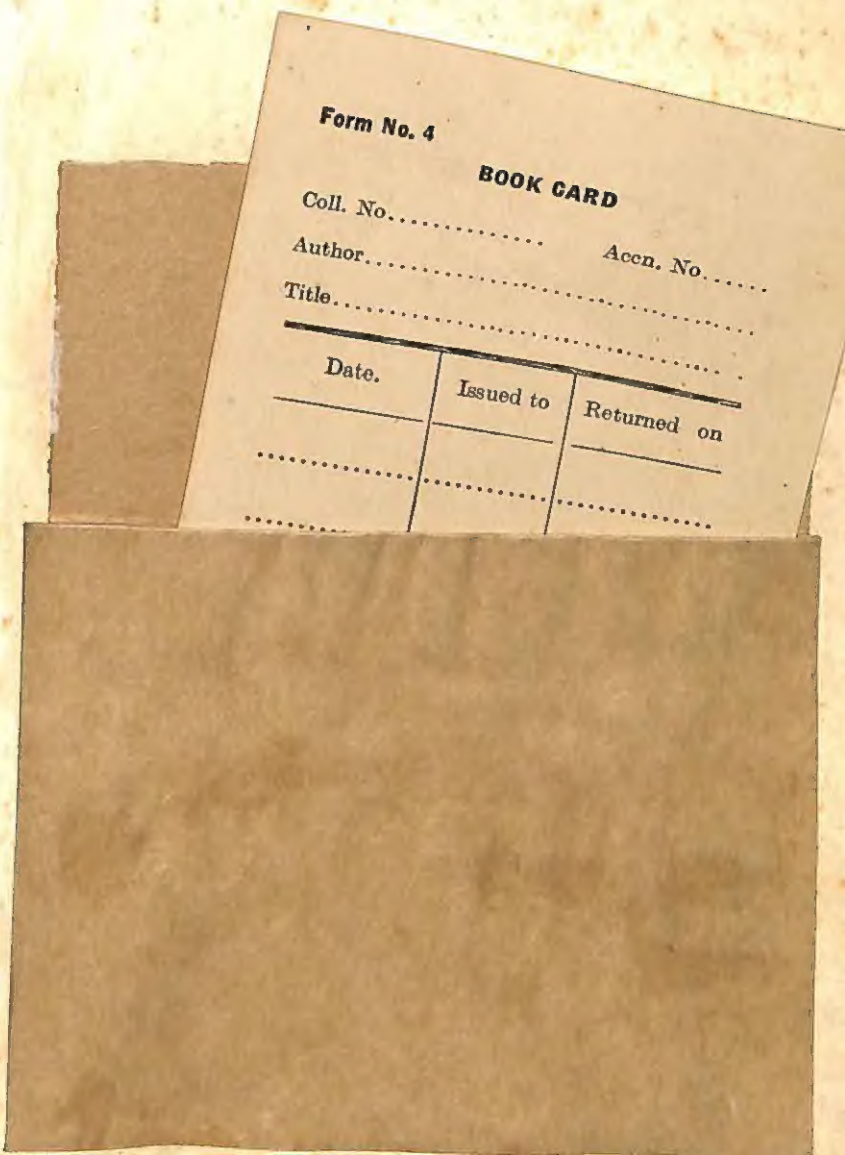
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